DEVOTED TO AGRICULTURE, HORTICULTURE, AND KINDRED ARTS.

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BEAUTIFUL JUNE.

"Seize, happy mortal, seize the good—
God's hand supplies thy sleep and food,
And makes thee truly blest;
With plenteous meals enjoy the day,
In slumber pass the night away,
And leave to fate the rest."

THE month of JUNE, in this climate, is, really, what the poets represent May to be, the most lovely month in the year. Summer is commenced, and warm weather thoroughly established; yet the heats rarely rise to excess, or interrupt the enjoyment of those pleasures which the scenes of nature at this time afford. The trees are in their fullest dress, and a profusion of the gayest flowers is everywhere scattered around, just before they are cut down by the scythe or scattered by the heat.

All nature is glowing with fervid life. The grain is green in the fields. The blades of corn are shooting up green and succulent. The plants in the garden are expanding their leaves and filling the soil with their rootlets, and each is struggling to secure possession of as much space as possible, for its further development.

The sun shines in our latitude more hours, this month, than in any other month of the year. His rays are sending their all-penetrating force into the most hidden recesses of animated nature, and under his stimulating influence, she is driving, in full tide, the life-blood through every artery and sap-vessel of every living thing.

And now that JUNE is so beautiful, its breath so fragrant with the sweet odors of the flowers, and all the rich influences of the heavens and the energies of nature herself are *working for us*, and cheering our labors, let us not be deficient in efforts for ourselves. First, let us

Work Systematically.

Although the farmer cannot be governed by exact rules as the mechanic can, he may still introduce system into his labors with convenience and profit. The work for June, and the other summer months, should be reduced to something like a plan, so that all confusion may be avoided, and everything be ready to accomplish the work in the easiest and best way, as each day and week makes its new demands. In this way no part of the crop is likely to be neglected.

NO WEEDS.—There is an old story of the heathen gods, of a famous robber named Sisyphus, who was killed by Theseus, and his punishment in another world was to roll a great and unwieldy stone to the top of a high hill, and as often as the stone almost touched the top of the mountain, down it would go again, in spite of all his efforts to prevent it. So he had to trot back and roll it up again!

The stone of Sisyphus pretty well illustrates the folly of allowing weeds to perfect themselves in our gardens and fields. The farmer

destroys an immensity of them in one year, but they are so numerous that sufficient remain to bring up legions the next,—so he goes on, pulling up a world of them, like rolling up the stone, and leaving a plentiful crop to re-seed the land for generations to come!

There is only one sensible rule about the matter, and that is, *utter extermination*. Do not leave one weed, to attract even the beautiful snow-bunting in the winter, who comes to feed upon its seeds.

THE CULTIVATOR AND HOE.—These must be kept in motion, and while using them, do not think that it is an operation merely to kill weeds or prevent them from starting,—but rather that it is an operation full of scientific principles, all of which tend to mellow the soil, to admit warmth and moisture into it, and fit it to receive important influences from the air. When you indulge in this train of thought, your work will rise in dignity and importance, the hours and days will appear shorter, and at night you will return from the fields a more cheerful and happy laborer from God's vineyard.

CONCLUSION.—We must not detain you in this beautiful and busy season, to refer to many more important things. Only one other point will bring us to a conclusion, and that

RELATES TO HAYING.—On many pieces of our excellent land the grass comes into blossom as early as the 20th or 25th of June, and many years' experience confirms us in the opinion that it is better to commence haying with such grass at that period, and then keep on in securing the general crop. Clover, especially, ought to be cut before any of it is lodged. From June 20 to July 20, we usually have the finest hay weather that occurs during the season. It is thirty days in which we are enabled to secure hay a third faster, with the same help, than we can in any other thirty days. Try it, brother farmers, and inform us of the result.

P. S. Do not fail to devote a day or two to visiting during the month of June, with some of the members of the family. If you have no family get one as fast as possible, and let the wedding tour come in JUNE.

—An army of rats made a raid on the hog-pen of a farmer at Summer Hill, N. Y., a few weeks ago, and killed and nearly devoured a hog weighing two hundred pounds.

For the New England Farmer.

HOW PLANTS GROW.

Put a seed in the ground, and observe what takes place. Soon it begins to swell, and in a few days bursts its envelope. The plumule or stem is now visible, folded along the opening edge of the seed, and tending to push its extremity into an erect position. The radicle becomes visible, and soon divides itself into several parts, with hairy projections on their surface. Within the seed a change has taken place, not apparent to the eye. A portion of the starch in which the germ is enveloped, has been converted into a soft sweetish substance, which is being absorbed by the stem and radicle, and constitutes their food for a time, just as the yolk and albumen within the shell are absorbed and digested by the chick, until the organs by which it can obtain nourishment from without, are perfected. The little hairy projections on the surface of the radicle are daily becoming more numerous, and each is terminated by an open mouth. These are the organs by which the young plant is to communicate with the soil. The rising stem now pushes through the soil, into the air, and the light converts its yellowish white color into a delicate green. Plants that grow in the dark are never green. When the buds are unfolding and the leaves are growing rapidly in the spring, if there are two or three cloudy or rainy days, the portions of the leaves that have grown during these days, will be of a lighter green than the portions that had previously grown, and when the sun breaks forth, a few hours will change their hue to a dark and brilliant green; thus showing that the green color depends upon the chemical influence of the sun's rays upon the sap. A careful examination of the green surface of the stem will disclose minute orifices in great number, or pores, which are so many organs by which the stem communicates with the air, as the root does with the soil. The starch within the seed has now been wholly changed into sweet pulp, and digested by the organs of the growing plant. But it is no longer needed, for the organs by which the plant is to communicate with the external world are complete. It can take care of itself. It is now no longer dependent upon the nursing care of the mother plant, but has commenced a separate and independent life. It cannot indeed run about like the chick, and pick up its food, but it can drink it up from the soil in which it stands, and from the air which bathes its surfaces. And as it needs more food from day to day, to sustain its increasing growth, it obtains it by pushing its roots further and further into the soil, with new mouths constantly opening to drink it in; and by lifting itself higher and higher into the atmosphere, and forming new buds, and unfolding new leaves, or by increasing those already formed,—every new surface presenting new pores or mouths to drink in

nourishment. In a plant rapidly growing, hundreds of new mouths are thus formed every day, to increase its power of obtaining food; and thus its very growth increases its power of growing. As the stem advances in height, we find protuberances, either in the form of rings or circles, surrounding it, or segments of circles partially surrounding it. From these protuberances, which are so many reservoirs of sap, buds are thrown out, which soon lengthen into branches, on the surface of which new circles or segments are formed, giving rise to new buds and new branches. And here we may notice a curious fact, viz: that the buds and branches are not formed in direct line one above another; but each new bud is pushed out one-third or one-fifth of the circumference from the line of the last bud below it, so that each bud may have its bundle of sap vessels running directly to it, without interfering with the vessels which nourish the bud below.

This expansion of plants, below and above the soil, and the constant opening of new mouths or organs of communication with the external world, are the equivalent given to plants for the power of locomotion given to animals.

The life and expansion of plants is limited by their nature and the circumstances in which they are placed. Some complete their growth and provide for the continuation of their species in one year, while others continue to grow for two years, or for many years, perhaps for centuries. So with animal life. Some complete their growth and work in a few days or months, while others continue for several years, or scores of years, according to the laws of their nature. All living beings, whether vegetable or animal, are subject to certain laws inherent in the constitution given to them by the Creator, to which they must conform to attain the perfection of which they are capable. Circumstances may and do prevent this entire conformity, hence the imperfection which we constantly witness. J. R.

Concord, Mass., 1867.

BEET SUGAR.

To show the progress of the Beet Sugar manufacture in France, we copy a few paragraphs from Mr. Grant's little volume on "Beet Root Sugar and Cultivation of the Beet," which Messrs. Lee & Shepard have just published.

In 1810, M. Deyeux, a member of a committee previously appointed by Napoleon I. to investigate the subject of the manufacture of beet sugar, made his report, and presented two loaves of sugar equal in every respect to the best sugar from the cane, but neither the percentage of sugar obtained nor the cost of production was given. Reports not well verified were published that in Germany from four to six per cent. of sugar had been obtained.

By the experiments of M. Barruel, from fifty to sixty per cent. only of juice was obtained from the beet; whereas the production at the present time is from eighty to eighty-five per cent. The yield of sugar was about one and one-half per cent., while at the present time in France it is about seven; in Germany, eight to nine; and in Russia, nine to ten per cent The cost was nearly thirty cents per pound, while at the present time it is about four cents.

M. Derosne, a Frenchman, obtained in 1811, about two per cent. of sugar from the beet. Other experiments yielded two and one-half per cent. A factory working 500 tons of beets in a season was considered quite extensive. There are establishments now in operation that work 60,000 tons. A rasp then worked up about three tons per diem. Now, from 150 to 300 tons a day are consumed by one rasp.

In 1812 the cost of manufacturing sugar was about nine cents per pound. Chemical schools and imperial factories were established, and government ordered the cultivation of 100,000 acres of beets.

In December, 1814, favorable tariff duties infused new life into the industry; manufacturers introduced great improvements in their establishments, to such an extent that they obtained seventy per cent. of juice from the beet, in lieu of fifty and sixty. The yield of sugar was from three to four per cent., and of molasses about five per cent. M. Crespel Delisse claimed that he obtained five per cent. sugar and 4.8 molasses. The cost of manufacturing was about seven cents per pound.

From 1822 to 1830 the number of manufactories largely increased. The yield of sugar was about five per cent., and the cost of production about five and one-half cents per pound.

In 1825 France produced 5000 tons of sugar in over one hundred establishments. From 1830 to 1836 great progress was made. The sugar produced was of improved quality, and amounted to about five per cent. of the weight of beets worked. The introduction of steam power increased the means of production tenfold. In 1836 four hundred and thirty-six factories were in operation.

Since 1840 the production of beet sugar in France has doubled every ten years.

There were sixty manufactories of beet sugar in Austria in 1840; in 1865 the number had increased to one hundred and forty.

The States of the Zollverein have nearly quadrupled their production in the past fifteen years, 52,586 tons having been produced in 1850, against 180,000 tons in 1865–6.

The intimate relation between this branch of industry and agriculture developed itself, and there were no longer unimproved lands in the vicinity of a sugar manufactory. In the department of the North, where the industry was most firmly established, the number of acres under cultivation in grain increased enormous-

ly, the beet pulp furnishing farmers with the means of feeding an increased number of cattle, thus providing the means of fertilizing an increased amount of land.

L'Echo Agricole says, that "all farmers who obtain first prizes at the agricultural exhibitions are either sugar manufacturers, distillers, or cultivators of the beet. Those who have adopted this branch of agriculture, either as proprietors or tenants, have really obtained astonishing results.

M. Vallerand, who took the first prize in the Department of Aisne, bought, in 1853, a farm of eight hundred and thirty-two acres, the sales of produce from which amounted to $8,000. In 1859 it produced $41,200. M. Dargent, who took the first prize in the Department of Seine Inferieure, cultivated only fifty acres. He so increased the production of this farm that he obtained 154,000 pounds, or 68 tons and 168 pounds, of beets from a single acre. His yield of wheat was 43½ bushels, and of oats 58½ bushels to an acre.

The culture of the beet involved the necessity of deep ploughing, heavy manuring, and thorough weeding. The pulp from the juice is extracted in the manufacture is an excellent food for cattle, the number of which has been increased, in the districts devoted to that industry, from eight to ten-fold since the introduction of sugar-making. The cattle furnish an immense amount of manure, which, applied to the deeply-ploughed and well-weeded beet lands enhances their productiveness for the cereal crops. In 1853, when the Emperor and Empress came to Valenciennes, a triumphal arch was erected, with the following inscription:—

Sugar Manufacture.

Napoleon I. who created it.	*Napoleon III. who protected it.*
Before the manufacture of beet sugar, the arrondissement of Valenciennes produced 695,750 bushels of wheat, and fattened 700 oxen.	Since the manufacture of beet sugar was introduced, the arrondissement of Valenciennes produced 1,157,750 bushels of wheat, and fattens 11,500 oxen.

Among the conclusions to which Mr. Grant has arrived from his careful investigation of the whole subject, are the following:—

That the skill, which is the result of the experience of more than a century, and which has made France independent of foreign countries for her supply of sugar, is available for us to-day.

That the manufacture of beet sugar can be successfully transplanted from France to the United States.

That sugar can be produced in this country from the beet nearly if not quite as cheaply as it can be from the cane in Cuba, or any other country.

And that at present prices beet sugar can be manufactured in this country at a profit of from eighty to one hundred per cent.

A ROUGH SWAMP RECLAIMED.

A correspondent furnishes the following particulars of the reclamation of about two and a half acres of land, situated in North Woburn, Mass., near the soap factory of Messrs. Eaton & Co. At first Mr. Eaton tried a small piece, by applying a dressing of sand and manure to the surface, but was not satisfied with the process, as it settled down quite too solid, and he was obliged to pick it all over. Most of the swamp was thickly covered with bushes, the mud varying from seven to fifteen feet deep, in which were several open spring holes. Six years ago, the swamp was drained, and the top sod was entirely taken off, the spring holes filled up and a layer of gravel was spread over the surface. To this was added a compost of "sugar" gravel and horse manure, and the whole piece seeded down. A dressing of similar compost has been applied every fall. Mr. Eaton estimated the first year's crop at seven tons; two years ago it was eleven tons; and last year he kept six horses through the winter which had no other hay than that harvested in two crops from this meadow. The whole cost of reclaiming has been about eight hundred dollars.

PREPARING RENNET.—At a late meeting of the Little Falls, N. Y., Farmers' Club, Mr. William Davis stated his process:—He kills his calves at four days old; lets the calf suck at night; kills the next morning, and removes the rennet: empties by turning it inside out. Wipes with a soft cloth all filth that is attached, never washes; salts and packs away for a few days, until the rennet is saturated thoroughly with salt; hangs up on crotched sticks in a room where the temperature is about 60 degrees. When sufficiently dry, packs away securely from flies, dust, &c. Does not use until the next year.

CURING MEAT.—In Buffalo they are applying the Alberger process of curing meat. After the animal is killed, the belly is split open and an incision made in the heart; then comes scalding and bristling; after this another incision made on the opposite side of the heart, and into the two, rubber tubes inserted, and brine well heated, (320°) forced in. In a few minutes the brine is distributed through the carcass, and the meat is cured, the remaining blood being displaced at the same time.

—A correspondent of the New York Farmers' Club, says that chickens, worms or squirrels, will not touch seed corn that has been smoked with hams in a smoke house.

FIG 1. *Branch of Staminate or Male Hop-Vine.*

FIG. 2. *Branch of a Pistillate or Female Hop-Vine.*

The above cuts are drawn on a reduced scale, but a single flower of the male vine is shown at the left-hand corner of the plate, of natural size.

CULTIVATION OF HOPS.

Choon soil for the hop of rottenest mould,
Well doonged and wrought as a garden plot should;
Not far from the water (but not overflowne;)
This lesson well noted, is meet to be knowne.

The sun in the South, or else Southlie and West,
Is joy to the hop as welcomed ghest;
But wind in the North, or else Northerly East,
To hop is as ill as fray in a feast.

Thus wrote Thomas Tusser, Esq., more than three hundred years ago, in his celebrated "Five Hundred Points of Good Husbandry." Notwithstanding the quaintness of his style, it will be seen that his lines are full of hints as to the soil, manure, location, exposure, &c., adapted to the growth of the hop.

For the WEEKLY FARMER, of February 16, we prepared an article on the Cultivation of Hops, which was published without any illustrations. In consequence of the frequent requests which have been made for such illustrations, and for further information upon the subject, we have obtained permission to copy from a cheap, but valuable work entitled Hop Culture, published by Orange Judd & Co., of New York, a series of cuts which illustrate the usual modes of cultivating the hop in this country, and of preparing it for market.

The New American Cyclopædia describes the hop as "a vine with a perennial root from which spring up numerous annual shoots, forming slender flexible stems, angular and rough to the touch. These climb spirally to the height of twenty or thirty feet. The leaves are opposite, on long winding petioles; the smaller ones heart-shaped, the larger three or five lobed. It is found wild both in America and Europe. The flowers of the male plant (Fig. 1,) have a calyx of five leaves and no corolla; those of the female plant (Fig. 2,) have for their calyx the scales of an ament, each two-flowered, styles two, seed one. They form a foliaceous cone or strobile, called also catkin, for the sake of which alone the plant is cultivated. The catkins consist of the scales, nuts, and lupuline grains or glands. The scales are bracts enclosing the nuts which are small and hard. They are covered at their base with an aromatic resinous substance of yellowish color known as lupuline. This constitutes about

one-sixth of the weight of the dried catkins, and contains the greater portion of their valuable qualities."

In this country, as we have previously remarked, hops may be grown, as a general rule, on any good corn land. But in the United States as well as in England, the bulk of the crop is grown in a few favorable localities. The production of the single county of Kent, in the southeastern part of England, probably represents one half of the whole amount raised in all the other counties. In Otsego County, N. Y., it was estimated that 4,000,000 lbs. were raised in 1863, which is more than the whole crop of the United States for 1820, and nearly one-half of the product of the State in 1860.

The hop-yard should not be located in a valley or near thick woods, but still it should be sheltered by hill or wood from prevailing winds, for the reason suggested in the last two lines quoted above from Mr. Tusser. On the friable calcareous soils of Kent, England, hop roots have been found to descend ten, fifteen and more feet in search of food and moisture. This fact illustrates the importance of deep and thorough preparation of the soil. The great expense of poles, bins, kilns, bags, labor, &c., necessary to prepare the crop for market, makes it poor policy to spare labor or manure in starting the yard.

After the ground is duly prepared for planting, the places for hills—seven feet by eight is a common distance—are usually marked by furrowing each way, much care being taken to run them straight. If greater exactness is desired, or if the yard is small, the hills may be marked off readily by the use of lines and as many stakes as hills. Whether the hills are formed by the intersection of two furrows or by spading where sticks are used, the following cut illustrates the position of the sets and the manner of covering them and placing the stake to mark the hill.

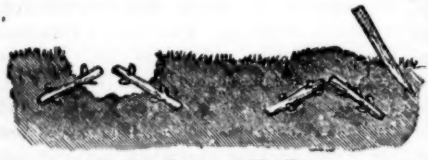


FIG. 3. *Manner of Planting.*

The directions for planting, which should be done as early in the spring as the season will permit, say, about the last of April or first of May, we copy, with the cut, (Fig. 3,) from Mr. Judd's Hop Culture.

Cultivation the First Year.

Provide a dibble, or a sharp piece of iron, to make the holes in the manner shown in the cut. The sets are inserted in these holes, *taking care that the eyes in the set point upward.* Four sets, at equal distances apart,—although but two are shown in the cut,—form the hill, their upper ends approximating as in the figure. A handful of bones broken fine and thrown into the hill, will prove of great value by producing a rich, high-flavored hop. To cover the sets, take hold of the upper ends and pack the earth carefully around and over them, as shown in Figure 3. The sets are sometimes planted like potatoes, and sometimes an iron crowbar is used, the sets being held by one hand and the earth filled in around them. On examination of hills planted in this manner, they are frequently found twisted together in the form of a rope, much to the injury of the hill. There is another mode, that is regarded by some as having advantages over the above methods, which is as follows: Take the prepared sets and bed them, or plant them in rows sufficiently wide to admit of the free use of the cultivator; a single set in a place from five to six inches apart. The bed should receive careful attention in the way of hoeing and weeding. A dressing of special manure is useful. The best that I have ever used consists of six or eight parts of charcoal dust, two of pulverized hen manure, and one of plaster. This is also a valuable manure to be used yearly, after the first hoeing. The sets should be taken up the next October, and planted with great care. One strong, healthy set will make a hill. Immediately after planting, the hill should be covered with two or three shovels of manure. A yard planted in this manner will come into bearing the next season, the same as if planted out, as in the manner first described. It is customary to plant corn, potatoes, beans, tobacco, or any other hoed crop, with hops the first year. The crop that shades the least is best.

MALE HOPS.—In the centre of every hundred hills, or at regular intervals, should be planted a male hill. The poles should be left in these hills, or other means adopted to mark them distinctly and permanently. When the shoots are taken from these, they should be tied in bundles and put by themselves, to prevent their becoming mixed with those of the bearing plants. The male plant is of the utmost importance; for without this, it is impossible to produce good hops.

Corn, potatoes, or any other hoed crop, can be raised the first year with the hops. The cultivation consists in keeping the weeds down and the ground mellow. One day's work in

season is better than two later. If good sets are used, and they are planted very early, it will pay to raise a crop the first year, and the plants will be the better for it. Set one stake to each hill, and let *all* the vines run upon it. The stake should be but eight feet long and set one foot in the ground; if longer than that, the vines will not get to the top in season to "*hop*" well. It is best to stake the plants, because then they are out of the way in cultivating the yard, and do not get torn off. We raise from two hundred to four hundred pounds to the acre the first year, at no cost, except picking and drying, besides the cultivation, which must be done even if none are raised. The stakes may be pieces of old hop-poles, or better, one and a quarter inch square sawed stuff, eight feet long, (there is one *foot*, board measure, in each stake.) It pays well to get gas tar, heat it in a pan made for the purpose, and dip the whole stake into it while it is hot. This makes a firm coat of paint on the stake, protects it from the weather, and at the same time is very offensive to insects, and plant-lice will not lay their eggs on it in the fall. In the autumn of the first year, a covering of two forkfuls of coarse manure should be given the hills, and if there is any chance of water standing on the surface, furrows must be plowed for surface drains, for it will kill the hills it covers.

We shall have something upon the second year's management on another page.

RAISING CALVES.

For the first ten days the young calf is allowed the milk of the cow exclusively. The milk of the newly calved cow, as every dairyman knows, is not fit during the first week for dairy purposes, and is the only suitable nourishment for the delicate digestive organs of its young. For a few days after this period, about two or three quarts of milk at a meal should still be given, gradually adding some other food in the shape of gruel, and at the same time diluting the milk with water, so as to obtain the requisite quantity of fluid. Some recommend whey, where it can be procured. The gruel is made with a mixture of linseed-meal or oil-cake, powdered fine, and meal of various grains, barley, oats, and a little wheat flour. The proportions recommended by Mr. Henry Ruck, in a paper read by him at one of the meetings of the Cirencester Farmers' Club, (England) are as follows:—Into a 6 gallon bucket pour 2 gallons of scalding water, stir into this 7 pounds of ground linseed cake; then add 2 gallons of hay tea, which should be fresh and sweet; next add 7 pounds of mixed meal; add sufficient cold water to fill the bucket, and well mix together. Two quarts of this gruel, diluted with two quarts of cold water, will be about the right quantity, and of the right temperature, for one calf at one meal. The food should be given at regular hours, and twice a day, morning and evening, will be found sufficient. The hay tea, which seems to be an excellent preparation, is made every morning by filling a small tub with good hay, and pouring on scalding water; this should be used in the evening, fresh scalding water added, covered down, and used the following morning. After the first fortnight, when the calf begins to chew the cud, the chief difficulty and danger are over. As the calf begins to eat, the quantity of gruel should be gradually diminished. Solid food should be placed before them, to train and encourage them to eat, which they will very soon learn to do. The best material for this purpose is good sweet hay, with a small supply of crushed corn and crushed oats. In addition to this, mangold wurzel willb e found serviceable, and is very much relished by the young animals.—*Canada Farmer.*

FEATURES OF A PERFECT ANIMAL.

A perfect breeding or feeding animal should have a fine expression of countenance—mild, serene and expressive. It thould be fine in the bone, with clean muzzle, and a tail like a rat's. It should be short on the legs, and not ewe-necked. It should have a small, well-put-on head, with a prominent eye; it should have a skin not too thick nor too thin, covered with fine, silky hair—to the touch like a lady's glove; it should be straight-backed; well ribbed up and well ribbed home; the hook bones should not be too wide apart. A wide-hooked animal, especially a cow after calving, always has a vacancy between the hook and the tail, and a want of the most valuable part of the carcase. A level line should run from the hook to the tail. The outline ought to be such that if a tape is stretched from the fore shoulder to the thigh, and from the shoulder along the back to the extremity there, the line should be close, with no vacancies; and the line should fall without a void from the hook to the tail. From the shoulder-blade to the head should be well filled up; as we say—good in the neck vein. Scarcely any one animal will possess all these marks—indeed, to look for the half of them in a good commercial animal would be vain. The marks are set down in good order, but just as they occurred to one who had gained his knowledge from the study of the living specimens, and not from books. Thick legs, thick tails, and deep necks, with thick skin and bristly hair, always point to sluggish feeders.—*Mr. McCombie, of Scotland.*

SILK.—J. W. C. Seavey & Co., Canton, Mass., manufacture sewing silks, machine and stick twist, employ 60 hands, and produce upwards of 300 pounds per week. The factory has been in operation for fifteen years, and within three years its producing capacity has been doubled.

ROOTS AND GRAIN CROPS.

MUCH has been written on the subject of root crops. The question, whether roots are cheaper than corn in feeding horses and other domestic animals while at labor, has not, perhaps, been satisfactorily solved, nor are we aware that any experiments that can be confidently relied on, have been instituted with a view of deciding the point.

A writer in the "*Farmer and Gardener*," an English work of high authority, in speaking of "Horse Feed," says:—

To begin, we will premise, that each working horse will consume three gallons of corn per day, or one hundred and twenty-six bushels seven gallons a year; now if we take thirty bushels as the average yield of an acre in corn, which is a large one, it will take four acres, sixty perches of ground to raise corn enough to sustain a single horse; on the other hand let us suppose that an acre in carrots will yield three hundred bushels, (and this is a small average, for 700 bushels have often been produced on an acre,) and as it has been ascertained that *three pecks* of this root, daily, is sufficient to sustain a horse well at labor, as there are twelve hundred pecks in three hundred bushels, so will one acre sustain a horse one year and thirty-five days, making a saving of three acres and ninety perches of land, and nearly the equivalent of that amount of labor in tillage, as all will admit that if the carrots be *judiciously drilled*, the amount of labor to be performed on their culture, is very little greater than what is requisite to secure a good yield of corn—*one thinning* and *three hoeings* being all that is necessary to ensure a good crop. As to the manuring, we will observe, that they do not require more than ought to be given to corn, as less than twenty loads should not be devoted to either. The gathering and preservation is, to be sure, more tedious per acre, but when the labor to be bestowed on four acres and ninety perches in corn, is compared with that requisite for one acre of carrots, we think the amount will stand decidedly in favor of the latter.

We may here observe that seven hundred bushels per acre, is by no means to be regarded as an extra—much less as the maximum yield of this root. A gentleman in Norfolk County, Mass., informed us that he had raised carrots at the rate of 1,600 bushels to the acre, having about one-fourth of an acre accurately measured. The crop was on good land, highly manured and thoroughly tended. The yield of corn in the above estimate, which is averaged at *thirty* bushels, is less than it should be, unless, as we suspect, the writer being English, means *wheat*, for which "corn" is the popular designation in England. More than three times that amount of Indian corn is often produced, per acre, in New England.

Mr. S. BLAGGE, of Dorchester, Mass., many years ago, sent a communication upon the culture of carrots to the *Massachusetts Agricultural Repository*, in which he states that he spread three ox cart loads of old stable manure on one-eighth of an acre of land, of a rich, light loam, in which potatoes had been planted for two years preceding. Plowed it in the fall and twice in the spring, the last time about the first of May. Sowed the seeds in furrows about one foot apart. In ten days the carrots could be just perceived above the surface of the earth, and in six more the rows were plain. They were then hoed. In twenty days more they were hoed and weeded. In two weeks from this time they were thinned, those left standing in the ground remaining about one inch from each other.

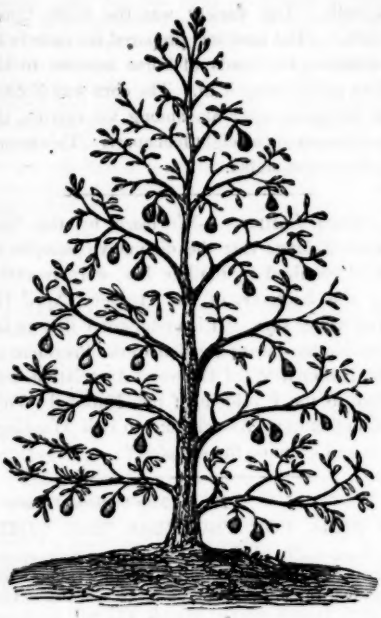
In the beginning of July they were hilled, so as to cover the top of the root, and left until the beginning of November, when the crop was collected, and measured *one hundred and sixty bushels*, or at the rate of 1280 bushels per acre! He adds:

"As the foregoing was intended as an experiment, I was particular in keeping an account of the expenses attending it, and find that the whole amount for manure, labor, &c., was $15.33 including $1.33 which I paid for one pound of seed.

"I am convinced that a farmer who has a considerable stock to provide for, cannot appropriate a few acres of his land to a better purpose, than that of raising carrots. Their nutritious property supplies the use of hand food for beeves; and they are extremely serviceable to milch cows, who require something better than dry fodder during our tedious winters. Horses are very fond of them, cut in pieces of three inches in length, washed clean, and given to them in proper quantities."

With the improved modes of culture which have been introduced since Mr. Blagge wrote the above, we have no doubt that carrots may be raised much cheaper than they could be at that time; for less than one-half his cost, indeed. A man can perform as much in a carrot field in one day, with Harrington's Cultivator, as he could in three with a common hoe, and do the work as well.

—The Kennebec Union Agricultural and Horticultural Society elected officers in Gardiner, March 2. President—Wm. H. Merrill, West Gardiner; Vice Presidents—Benj. Berry, Litchfield; N. Foster, Gardiner; A. D. Knight, Hallowell; Secretary—S. Smiley, Gardiner; Treasurer and Collector—Cyrus Libby, Gardiner.



DWARF PEAR TREE.

Is n't that beautiful? Does n't it almost make your mouth water? And yet there is no law that forbids the growth of such a tree in your garden, or of one a little less symmetrical, if you do not happen to find a tree equally regular in its proportions, or if yours should refuse to limb out just according to the picture. If you want such a tree, now is the time to set it out; and our object in getting up the cut is, we confess, purposely to "lead you into temptation."

A PREMIUM FARM.

A business correspondent expresses much gratification from a late visit to the farm of S. M. Thomas, of Wayland, Mass., to which the first premium of the Middlesex Agricultural Society was awarded a few years ago. The predecessor of Mr. Thomas, though considered a smart business man, did not succeed in making a living upon it. The present occupant has had possession about twenty-five years. He is not a trading man, and has brought up this farm to its present good condition simply by industry and strict attention to business. The buildings are all new, well situated, capacious and convenient—especially the large barn cellar. The soil is mostly a rich loam, not much clayey, yet well adapted to grass. In consequence of the labor required to make milk, Mr. Thomas does not sell it as formerly. He prefers to feed steers which he buys to keep over. He must have stock of some kind to make manure, as he cannot buy it for less than ten dollars per cord. Our correspondent speaks of "a noble pair of team horses, six oxen, about thirty head of neat stock, and twenty hogs," whose contributions to the manure heap are most carefully husbanded, as is all that which results from the production of about 3000 pounds of pork a year. Mr. Thomas had 300 cords of fire wood, cut the past winter, all but about fifty cords of which has been drawn. The blocking-up snows have interfered, and delayed the finishing of this job until it is treading on the heels of the spring work.

NEW PUBLICATIONS.

THE VEGETABLE WORLD; being a History of Plants, with their Botanical Descriptions and Peculiar Properties. By Louis Figuier, author of the "World before the Deluge," and other popular works. Illustrated with 446 engravings, interspersed through the text, and 24 full-page Illustrations; chiefly drawn from Nature by M. Faquet, Illustrator to the Botanical Course of the Faculty of Sciences of Paris. New York; D. Appleton & Co., 445 Broadway; Boston: Lee & Shepard. 1867. 576 large 8vo pages, with a full index.

As respects paper, type and illustrations, this superb volume is in the highest style of English art. From the little cut of a potato plant on page 468 to the full-page illustration of the Great Tree of California, the perfection of the engraver's art is wonderfully displayed, and most happily unites the sentiment of the artist with the precision of the naturalist. Though less capable of judging in respect to the scientific ability of the text, we believe it is entitled to a similar hearty commendation, though possessing in a high degree the attractiveness of popular description. The work is divided into four parts: 1. the Organography and Physiology of plants; 2. The Classification of Plants; 3. The Natural Family of Plants; 4. Geographical Distribution of Plants on the surface of the Globe. As a present to a friend who loves and appreciates the flowers and plants of the earth, or as an acquisition to a library to which children have access, we recommend this volume as one well calculated to please the eye, to instruct the mind and to elevate thought.

CHEMISTRY.

During the past winter we listened with great pleasure to a lecture on the question What has Chemistry done for Agriculture? by Dr. JAMES R. NICHOLS, of Haverhill, Mass. The same lecture was delivered be-

fore the Board of Agriculture in Salem, with great acceptation, and we have it now before us in pamphlet form.

We have room at present for only a single extract, which is of so much value in this age of seeking after fertilizers, that we embrace the earliest available moment of laying it before the reader. It has been tested by a farmer near us, and found excellent. It is as follows:—

"Take one hundred pounds of bones, beaten into as small fragments as possible, pack them in a tight cask or box with one hundred pounds of good wood ashes. Mix with the ashes, before packing, twenty-five pounds of slaked lime, and twelve pounds of sal soda, powdered fine. It will require about twenty gallons of water to saturate the mass, but more may be added from time to time to maintain moisture. In two or three weeks the bones will be broken down completely, and the whole turned out on the floor, mixed with two bushels of dry peat or good soil, and after drying will be fit for use."

NORFOLK COUNTY, MASS.

At the annual meeting of the Agricultural Society of this county, at Dedham, March 27, the following officers were elected:

President—The Hon. Marshall P. Wilder, Dorchester.

Vice Presidents—Amos A. Lawrence, Brookline; Otis Cary, Foxboro'; John Gardner, Dedham; Stephen W. Richardson, Franklin; Elijah Tucker, Milton; Henry Grew, Dorchester.

Corresponding and Recording Secretary—Henry O. Hildreth, Dedham.

Treasurer—Chauncey C. Churchill, Dedham.

Executive Committee—Marshall P. Wilder, Dorchester; Cheever Newhall, Dorchester; H. Hollis Hunnewell, Needham; Aaron D. Weld, West Roxbury; Joseph H. Billings, West Roxbury; Francis P. Denny, Brookline; William R. Mann, Sharon; Truman Clarke, Walpole; Chas Breck, Milton.

Finance Committee and Auditors—Ira Cleveland, Dedham; Charles Hamant, Medfield; E. S. Rand, Jr., Dedham.

Mr. Wilder was elected member of the Board of Agriculture. He was also recognized as the delegate of the Society to the Paris Exposition, by a series of complimentary resolutions.

PRODUCT OF ONE COW.—Mr. S. King, North Monmouth, Me., has a cow from which he made the last season 212 pounds butter, 223 pounds of cheese, raised one calf, and sold $10 worth of milk. As this was his only cow, of course what milk the family used was also taken from her.

PROLIFIC CORN.—Dr. Wm. Morse, of Canton, Mass., raised last season from one kernel of corn, fourteen ears containing 1672 sound kernels. The variety was the white "pop-corn." The land was prepared for carrots by spreading two cords of horse manure to the acre and plowing it in. The corn was planted at irregular intervals among the carrots, the seed about six or eight feet apart. This kernel sent up five stalks.

WOOL SAMPLES.—We learn by the New York *Tribune* that the distinctive samples of wool required by the late law, were received by the Secretary of the Treasury, April 11. The writer says, "It is understood that an invitation has been extended to the President of the National Wool Growers' Association, and also to the President of the National Wool Manufacturers' Association, to visit Washington and examine the samples."

For the New England Farmer.

A PLEA FOR PROGRESS, THIS TIME.

I am really glad that one of your correspondents has stepped boldly out and taken side against raising poultry on a large scale. The article [see FARMER, March 16] will occasion reflection and discussion, and that is what leads to improvement.

It will be apparent to every reader that the theory of "N. S. T." is, that hens, in order to be profitable to the farmer, must, substantially, take care of themselves. They must "pick up" their living in a free and inexpensive way. And he would urge that, against such an advantage, the *cultivator* of fowls—if you will allow the expression—stands no sort of chance.

Now, Mr. Editor, I frankly confess that I belong to another school altogether. I will not consent to go back to the days of our fathers, when a mowing machine was looked upon as a new-fangled notion, and contest this matter on the *picking up* theory. We might as well expect our horses or our cattle to gain their subsistence from the corners of our yard, or from the road-side, as our hens. My own experience teaches me that fowls, under *judicious* confinement, fed from the granary, and well cared for, are far more profitable than those which rove about the fields and look out for themselves. I should yield the ground at once, without a word of discussion, if I thought otherwise. I know that some of your readers, who haven't lived in vain, will smile just a little at this "answer" to my plea.

As for the distempers and epidemics which constitute the ground work of the other prominent reasons why raising fowls on an extensive scale proves unprofitable, that appears to me to be mostly fancy. Shut a dozen fowls up in an empty flour barrel, and I should expect an awful mortality among them before a great

while. Or let the coop be enlarged, while little or no attention is paid to cleanliness, and the result will be precisely the same. But when allowed to run in large and well-constructed yards, with plenty of clean, fresh water, and plenty of green and growing vegetables to pick at during summer; when their roosts and their nests are kept scrupulously clean and free from vermin, with good ventilation, fowls will flourish and repay all the care bestowed upon them. Making up our minds that a thing can't be done because others have tried it and failed, is unworthy of us at this late day. It is a very cheap argument, yet often met with.

Fifteen years ago, when I moved into the "suburbs," I thought I must have some hens, to complete the rural picture. At first I tried the picking up theory, but I very soon found that this would not do. I got no eggs of any account. And besides, my neighbors were after me. Their gardens, as well as my own, couldn't stand the mischief.

Then I tried the shutting up; had a yard made a little larger than a barn-door, with nice nests, and all that. And I know the fowls did not suffer for food, either. All this occupied three years. But still the eggs were not plenty.

After a while a friend from the city came out to sup with me. Of course I had to show him my garden and descant upon its merits. The crop of pears—and a splendid crop it was—pleased him wonderfully, and he complimented me highly. To my surprise, he knew the names of every variety as well as I did. As I had taken him for a "novice," this puzzled me not a little. However, I afterwards found out that he was a constant visitor at the Horticultural Society's rooms, in the city, and had a good memory to back his good sense. I took him to see my poultry, too; but here his compliments were not profuse. He asked me in a quiet way, I remember, if my hens laid well. I told him frankly that they did not. "Well," he replied, "they would be fools if they did, in such a place as this!"

I felt nettled at his frank criticism, for I had flattered myself that I took excellent care of my biddies. He must have noticed my confusion, for he at once went on in his good-natured way to offer me some hints in regard to the business. Confound the fellow, I don't believe he ever raised a hen in his life. He was one of your blackboard farmers. But he had an eye like a hawk, was a great reader, and a keen observer; and I at once saw that he was *au fait* on the subject of poultry as well as pears.

"You see," he said, "hens are living, breathing creatures, just like men and women, and they want fresh air. They can't get it here. Then look at that dirty water; possibly they drink it, because they are obliged to. Just look here," and as he said this, he directed my attention to the roost, "see the vermin!"

I will not go through the entire lecture; the above is a fair specimen of the whole. Suffice it to say, it did its work effectually; or rather, it put me in the way of doing mine. The difficulty stared me in the face as plain as day. And as soon as my friend was on board the cars to go home, I began to arrange for a revolution about my hen-house. I had my yard enlarged ten-fold. The old nests, which had been constructed stationary, were removed, and movable ones were put up, so that every inch of the room could be occasionally cleaned and white-washed. Then the fowls were made to roost in the barn-cellar, which was warm, light enough, and well ventilated.

I will not tire you with details, but only say, that my success was *perfect and satisfactory*. My hens at once become profitable, and yet I did not do all that might have been done to make them so.

"N. S. T." is shy about coming up to the main question in my plea. He doesn't mention a word about the "reasonable and profitable course" pursued by the gentleman in Manville, mentioned in a late FARMER. He enclosed an acre and a quarter of land with a high fence, and in that yard he kept about one hundred and fifty hens. During nine months of the year he tells us these fowls gave him a *net* profit of two dollars a day. My question was, why couldn't *another* similar yard be constructed alongside, for a like number of fowls, and double profit be gained? If not, *why* not? The second yard would cost less than the first, and it would be less labor, proportionally, to attend to two yards than one.

A single point more and I will close. Your correspondent offers the proposition that hens, being quite modest, when obliged to lay in nests which are used by other hens, become quite obstinate and indifferent about laying at all. Does he seriously mean this? That, through good care and good keeping, we can *stimulate* prolification, all will admit; but, this being done, I have yet to learn that nature's work can be, substantially, arrested at the effort of either the hen's modesty or her obstinacy. Equally absurd is it to talk about her laying eggs to repay the kindness of her master for feeding her. She cares not a rush for her master or her mistress, either. She lays because it is nature's work, and always "without a thought of repaying" any mortal's kindness. If seriously put forward, both these propositions may be set down, very safely, as "blackboard" physiology.

Nor do I at all agree with "N. S. T.," when he intimates that the Creator has interposed any bar to the progress of his children in any direction except that which pertains to absolute impossibility. We live in a world of progress. We do not know as much as our descendants will, a hundred years hence, by a great deal. They will look back upon us and our ways and wonder at our simple ideas; while they,

in their turn, will be considered as simple as we. And so I hold it to be irrational to point out anything not circumscribed as above stated, and say that it cannot be done. To say that it *is not* done, is no argument. IDEX.

For the New England Farmer.

NOTES ON GRAPES.

The result of fifteen years' experience in grape growing, has given me the following rules as essential to success:

The soil *must be* well drained. Other things being equal, elevated land is best. I prefer a southwestern exposure. Rich and long cultivated land is unfit for the best development of the grape. The soil should be trenched to the depth of from eighteen inches to two feet. For field culture this can be accomplished by the sub-soil plow. One of the most important points is to keep the soil in its original position, the top soil above, and the subsoil below.

For field culture, manure the same as for corn, when you expect to get one hundred bushels to the acre. This gives the plants a good start the first year, when wood and not fruit is the object. Plant about six inches deep. Distance according to the kind. Concord, twelve feet apart in the row; Delaware six feet. *I prefer* rows running North and South. Rows may be six or eight feet apart. Chestnut or cedar posts, and wire is the cheapest trellis. No. 10 wire is the best size. In the spring give the wire a coat of paint oil, using a woolen cloth, and it will last a lifetime. Fasten the wire to the outside of the posts with a small wire staple.

For field culture I prefer the Concord and Hartford. The objection to the latter that it drops its berries is of no account. No one wishes early grapes to *keep*. For the garden, add Delaware and Rogers' Hybrids, with one vine each of Diana and Allen's Hybrid. The two last should be taken down and covered in the fall.

The Concord, Hartford, Delaware, and Nos. 1, 3, 4, 15, 19 and 33 of Rogers' Hybrids are alike hardy with me. *As a class*, I prefer Rogers' Hybrids. So well assured was I of their superior excellence, that in 1855 the above numbers were entered for premium at the Plymouth County Agricultural Exhibition, as the best six varieties of Hardy Native Grapes, in competition with all other varieties, —using the Delaware as the test. They received the first premium, and the committee gave the No. 3 the first premium of the best single dish—a grape pre-eminent above all others—enormously productive, twice as large as the Delaware, same color, and *just as good*. No grape that has been tested as extensively as the Concord can compare with it in qualities that make it a general favorite. To-day it is the grape for the million.

It will be noticed that many varieties in cultivation and for sale, I have not mentioned. If a man has money and leisure he can afford to buy them. If not, he cannot. In a few years the question will be settled whether the immense amount of printer's ink and paper has benefited most the *sellers* or the *buyers* of grape vines. L. W. P.

North Bridgewater, Mass., March 18, 1867.

For the New England Farmer.

ABSORBENTS---POTATOES---WHEAT.

MESSRS. EDITORS:—In the FARMER of Feb. 2d, Mr. "Lectum" makes the speakers at a recent Farmers' meeting say some things which appear absurd. Where the meeting was, deponent saith not; but from some of the statements I should think it must have been on some other planet, rather than on this terraqueous globe.

"E. B." said he did not think liquid manure, from any animals, required any absorbent in the winter season,—the solid part being sufficient to absorb it all. I should like to know if his animals are well supplied with water; and whether he ever fed his hogs on pumpkins.

"F. D." said swamp muck is over 90 per cent. water. It is about 200 per cent. water; 100 pounds of muck when dry will absorb very nearly 200 pounds of water.

Dry Soil as an Absorbent.

I wish to say a word to Lectum through the FARMER, as I can do it in no other way, not knowing his real name or Post-office address. He asks, "Will it pay to dry and house common soil for an absorbent?" I say yes; it will pay abundantly. The same quantity of common soil by measure, will absorb as much liquid as meadow mud. If one has four cows, and will keep them in their stalls a suitable length of time, they will thoroughly saturate considerably more than one bushel of dry soil every day, in summer and in winter,—notwithstanding what "E. B." says to the contrary. This will in a year increase the quantity of manure more than four cords; while the quality will be but little if at all injured.

Cutting Seed and Raising Potatoes.

In the FARMER, Feb. 9th, under the heading of "Culture of Potatoes," it is recommended to cut them fine—not having more than two eyes to the piece—and put two pieces in the hills. It would be a great benefit to some farmers if those who recommend such scant seeding would prove the truth of their theory by accurate experiments.

I have received a private letter containing several inquiries, which, for several reasons, I choose to answer through the FARMER. The writer says:—

I notice you put three and four butts in a hill. Please state the number of germs or eyes each butt contained, and about the quantity of the potato you planted. Now, so many butts in a hill require a vast amount of seed, and so great a crowd have a small chance to expand and grow. Would it not

be far better to distribute the butts into drills,—say ten to twelve inches apart?

The number of eyes contained in each butt I do not know; probably not as many as were contained in the seed end which I cut off. The first bushel,—60 pounds,—of potatoes from which I cut the seed ends last year (which was a fair specimen of the whole) contained 392 potatoes; the butts weighed 49 pounds 6 ounces, seed ends 10 pounds 10 ounces; the butts, therefore, were a little less than five-sixths of the whole. Had you seen my potato field last August you would have admitted that they did "expand and grow." The vines completely covered the ground. In my first experiment, the product was nearly at the rate of 300 bushels to the acre. In my second experiment, on a pile of old mud without manure, the product was at the rate of over 280 bushels to the acre. I never had any experience in planting in drills. If all parts of the soil are within the reach of the roots, which I suppose to be the case when the hills are but three feet apart, I can see no advantage in drills. If your Long Island farmers would plant a whole butt, instead of a quarter, and thus plant four bushels where they now plant but one, I am confident they would raise larger crops, over and above the extra amount of seed. I can see no harm in their trying the experiment and communicating the result to the FARMER.

Whether the disadvantage of a larger number of small potatoes would more than counterbalance this increased product, I cannot say. For myself, I do not consider *small potatoes* an entire loss, as I have animals quite willing to eat them. You say the farmers on Long Island in digging their potatoes turn them out with a four or five-tined flat fork which takes them about all out at one pitch. From this, I suppose, the implement is made similar to a manure fork. Would it not be better if so constructed as to operate as a hoe? If the tines were round instead of flat, I should think they could be used with greater ease, as they would not meet with so much obstruction from the soil.

Raising Wheat.

But few farmers in this locality have attempted to raise wheat, and those who have, consider it an uncertain crop. There is often a large growth of straw, but the wheat is apt to blight.

Pasturing Mowing Lands.

I wish that some one who holds the pen of a ready and powerful writer, would write a premium article upon the injurious effects of feeding mowing lands in the fall and spring. *Spring* as well as *fall* feeding is, to some extent, still practiced. If the attention of farmers could be fairly turned to the subject, I think we should soon see a difference in their practice. Fall feeding is not practiced as the result of any well matured plan; it is not supported by any sound argument; but is excused on the plea of an imaginary necessity, and is practiced by thoughtlessly following an ancient custom. E. B.

Derry, N. H., March 6, 1867.

For the New England Farmer.

METEOROLOGICAL RECORD.

February, 1867.

These observations are taken for and under the direction of the Smithsonian Institution.

The average temperature of February was 29°; average midday temperature 36°. The corresponding averages for February, 1866, were 24° and 29°. Warmest day, the 9th, averaging 44°; coldest day, the 10th, averaging 16°; coldest morning, the 11th, thermometer 0°. Range of temperature from 0° to 52°. Average height of mercury in the barometer 29.30 ins.; average do. for February, 1866, 29.34 ins. Highest daily average 29.93 ins.; lowest do., 28.65 ins. Range of mercury from 28.63 ins. to 29.99 ins.

Fourteen stormy days. Rain fell upon five days. Amount of snow 12.50 ins. Amount of rain and melted snow 4.04 ins. Twelve stormy days, six of rain, in February, 1866, with 14.50 ins. snow, and 5.45 ins. of rain and melted snow. There were two cloudless days; on three days the sky was entirely overcast. No cloudless days and seven of total cloudiness in February, 1866.

This has been a very warm month as the comparison with record for last year will show. It is also remarkable in passing by without the "cold snap" which usually occurs in February. The warmth of the weather, with some rain, effectually disposed of the sleighing, making us about as short a season for sledding this winter as last. This absence of extreme cold is, however, an inestimable blessing to thousands of poor families in these times of high prices. A. C.

Claremont, N. H., 1867.

HOW TO LAY SAWED SHINGLES.

MESSRS. EDITORS,—Mr. Mansur, in his article in the *Farmer* of Feb. 21st, informs your readers how to "double the value of sawed shingles;" and I think well of his advice, though I have never tried the experiment. I am surprised to see how little attention farmers pay to the subject of roofing.

This subject is rather out of their line of business; but is it not as well to have a good roof, as to have good hay spoiled under a poor one? Farmers are not aware how soon their roofs need repairs where they have been constructed with cheap materials, such as sawed shingles with the sap on them. To lay shingles well, requires some practice; and to lay sawed shingles and make the best work that can be made with them, requires still more ex-

perience; or at least a more careful eye. Most all sawed shingles have a rough side, and a smooth one, i. e., they are sawn from the bolt somewhat across the grain of the wood; the grains lapping one over the other on the sides of the shingles should be laid so that the water will run over and not into them as it flows from the roof; in other words, lay them "right side up with care." If perfectly dry, they should be laid about one-eighth of an inch apart, to give them room to swell in wet weather; and should have but one nail in each shingle. Here is where most persons fail. In nailing, it is often said that we cannot nail shingles too well. "That's so," Messrs. Editors, but we can, and there is danger of nailing sawed shingles too much. Where they are nailed down too close they retain moisture, and consequently rot sooner than they would if one nail only were used in each shingle, which gives them a chance to curl up a little, and admit the air to circulate on the under side. I have had much experience, not only in Maine, but in other States, in this matter of shingling, and I find that the most practical or experienced builders prefer the above method of laying loosely, all kinds of sawed shingles. To make the most durable roof with such materials, I would have it first covered with narrow boards, put about three inches apart, across the rafters and then lay the shingles on them as I have described, and I doubt not that it will pay to immerse them in lime-water, as suggested by Mr. Mansur.—*C. Butterfield, in Me. Farmer.*

RAISING PEAR TREES.

Dr. VAN MONS, of Belgium, has written a letter to a correspondent of the *Magazine of Horticulture*, in which he describes a new mode of obtaining pear trees, which if reliable, will result in increasing the number of trees indefinitely. We suggest to all who are transplanting pear trees to make experiments according to the process described below, as it will cost little or nothing to do so.

But if the fact be, as he describes, why have not hundreds of us who have been digging up pear trees for the last twenty years, and leaving portions of their roots in the ground, found them springing up and making fine trees? Let us try it. The Dr. says:—

"I now propagate for myself and intimate friends the most choice varieties of pears, which I obtain by means of the roots. Not a single one fails in this new process. It is immaterial in what manner they are set out. This method I discovered accidentally, in consequence of some roots on which I intended to graft other kinds of pears, being thrown on the ground and covered with a little earth, to preserve them until used for that purpose, and which were lost sight of and forgotten until the next spring, when all of them sent up stocks, which, in the autumn, were as tall as those raised from the seed of two years' growth. They can be set out in the spring as well as autumn. If I had sooner known this method, I should not have lost a single one of my new varieties of pears, for roots could have been taken from all the kinds in my large plantation at the time of its destruction.

Such roots should be selected as have one or more terminal fibres, and those that are often cut off or left in the earth when a tree is transplanted succeed well. They cannot be too small, but should not be larger than the finger. The wounds at the large ends of the roots should be covered with the same composition to protect them, as in grafting. They must be set obliquely."

WOOL TARIFF.

The following, we believe, is a correct statement of the comparative rates of the tariff of June 30, 1864, and of the new act of March 2, 1867.

	Old Rates.	*New Rates.*
Clothing Wools, value 12 cts. pr lb. or less.	3 cts. per lb	
Clothing Wools, value over 12 cts. and not over 24 cts.	6 cts. per lb	10 cts. per lb. and 11 per ct. ad val.
Clothing Wools, value over 24 cts. and not over 32 cts.	10 cts. per lb and 10 pr ct.	
Clothing Wools, value over 32 cts. per lb.	12 cts. per lb and 10 pr ct.	12 cts. per lb. and 10 per ct. ad val.
Carpet Wools, valued at 12c or less per lb*	3 cts. per lb	3 cts. per pound.
Carpet Wools, valued over 12 cts. per lb*	6 cts. per lb	6 cts. per pound.

*Carpet Wools, as Donskoi and other Russian, Cordova or Spanish, Valparaiso, Egyptian and East India Wools compare as above.

Combing Wools, as Leicester, Cotswold, Lincolnshire, Canada Long Wools, Alpaca and Goat's Hair, compare precisely as Clothing Wools.

In reply to a correspondent who criticises the new law rather severely, and who says "it must take a pretty fine sight to see where the great advantage to the wool grower of the new tariff act comes in," the editor of the Ohio *Farmer* advances the following facts and figures in justification of a more hopeful view of the subject:

Of the 56,000,000 pounds of wool imported in 1866, only about 150,000 lbs. or less than one pound in 300, cost over 24 cents per lb. in the port whence exported; therefore, nearly all the wool imported last year paid but 3 to 6 cts. per lb. duty. Mestiza, all fine South American wools, imported in 1866, cost in Buenos Ayres 10 cents per lb., and paid a duty of 3 cents per lb. Wools from the Cape of Good Hope cost about 14 cents per lb., and paid 6 cents per lb. duty; these two classes comprising nearly ⅓ of all the wool imported. The old tariff, fixing the duty at 10 cents per lb. and 10 per cent. *ad valorem*, on wools costing

24 to 32 cents per lb., was a dead letter, because no wools, or next to none, were imported that cost over 24 cents per lb.

The new tariff classifies all wools imported into three distinct classes, indicating by name, in the first and second classes, all wools that come at all in competition with ours, and fixing the duty at 10 cents per lb. and 11 per cent. *ad valorem*, on all wools costing 32 cents per lb., or *less* (not 24 cents per lb. or *more*, as under the old tariff). So that if wools included in the first and second classes cost but 5 cents, or any sum less than 32 cents per lb., they pay a duty under the new tariff of 10 cts. per lb., and in addition thereto, 11 per cent. *ad valorem*; and ninety-nine one-hundreds of all the wools imported are included in classes No. 1 and 2. It is only the coarse native South American wools, and wools of like grade from other countries, that are included in the third class, and come in at 3 to 6 cents per lb. duty. But those wools do not compete with ours.

To recapitulate: Buenos Ayres, Mestiza, and all fine South American wools, cost to import, last year, 10 cents per lb., and three cents per lb. duty in gold. With gold at 135, the duty on a pound of wool was 4 cents in greenbacks. Take the same wool under the present tariff—a pound costs in Buenos Ayres 10 cents and 10 cents per pound duty, and in addition thereto, 11 per cent. *ad valorem*, and the duty on a lb. of wool is 11 cents in gold or 15 cents in greenbacks, which is 11 cents per lb. more duty than was paid in 1866. The Cape wools cost last year about 14 cents per lb. and paid about 6 cents per pound duty; with gold at 135 it would make the duty paid 8 cents per lb. in greenbacks. The same wool now pays 10 cents per pound and 11 per cent. *ad valorem* duty, which, reduced to greenbacks, is 15 cents per pound, or leaving out fractions, 7 cents per pound more duty than under the old tariff.

NEW PUBLICATIONS.

TRANSACTIONS of the Middlesex, (Mass.,) Agricultural Society, for the year 1866. With a List of Premiums for their 73d Exhibition, at Concord, Oct. 3 and 4, 1867; Officers, &c. Concord: Printed by Benjamin Tolman. 1867. Pages, 120.

This well printed pamphlet of 120 pages contains, beside the usual valuable record of the Society's Transactions for the year past, a list of premiums, officers, &c., for the present year, which is the seventy-third of the Society's existence. Addison Gage, West Cambridge, President; John Cummings, Jr., Woburn, and Simon Brown, Concord, Vice Presidents; John B. Moore, Concord, Sec'y; Richard Barrett, Concord, Treasurer. Fair at Concord, on the new grounds, October 3 and 4, 1867.

—According to British statistics, animals and children born in the latter part of summer are not likely to be long-lived.

FARMERS' GARDENS---No. IV.

Deepening the Soil.

IN the cultivation of most garden products, depth of soil is always a matter of importance. Lands on which the vegetable stratum is thin, are deficient in permanent productive power, and require a much larger application of manure, and more thorough working, than those which have greater depth. Digging two spits deep, as is practiced in Europe, or gradually going deeper with the plow, tends to obviate this difficulty, and will eventually render the soil productive, if the requisite care be exercised in cropping and manuring.

Where the upper stratum is thin, and reposing on a poor subsoil, a speedy change may be effected in the following manner, although from the great cost of labor in this country, it may not be advisable to adopt it except on a limited scale.

Along the margin of the piece to be improved, be it more or less, throw the soil, subsoil, sods and all, into a winrow on one side, to the depth which is desired, say twelve or twenty-four inches. Then commence on the side in the direction the improvement is to proceed, and deposit all the mould and sods taken from the top, in the bottom of the first trench, throwing that taken from the bottom of the second trench over on to the top of the first, and in this manner, proceed till the work is done. Then cart on old, well-decomposed compost, mixed with an equal volume of green, unfermented stable manure, and work the whole thoroughly into the yellow earth until the virgin soil is approached. A liberal allowance of manure is requisite in order to hasten the decomposition of the soluble silicates contained in the fresh earth, as well as to insure the more ready absorption of the fertilizing gases from the atmosphere, which are necessary to impart vigor and activity to its latent powers. A small quantity of fresh manure sprinkled in lightly as the filling goes on, will be of great service, and, indeed, any kind of vegetable matter, such as straw, forest leaves, or chip manure, will materially assist the pro-

cess of enriching, and furnish food for the plants.

Lands treated in this manner stand the drought much more successfully than untrenched grounds, and are always found to be more productive, with the *same amount* of manure, than the deepest soils in their natural and unworked state.

On gardens we have seen it tried repeatedly. It is well known that the sand and coarse gravel excavated from wells and cellars, will, when exposed to atmospheric influences, imbibe principles of fertility rapidly, where no manure is used, and become in a short time covered with verdure. We have known the common yellow, sandy loam, taken from the pit and spread upon upland mowing fields, with the happiest results. This loam is full of fertilizing salts, which, upon being brought to the influence of the air and rains, impart them to the roots of the grass with surprising effect.

Plaster and charcoal, each have a powerful tendency to absorb enriching principles from the air, and in all experiments like the one we have suggested, they can be profitably employed. The second year after digging, a very marked improvement will be apparent, and a single operation will have a decided influence for many years.

Those who have but little land should attend to this suggestion if they wish to make a garden highly productive. We have tried it on garden lands, accompanied with thorough draining, and think we have doubled the crop, using no more manure than we did before the trenching.

The Soil Breathes.

When a soil is brought into the genial and healthful condition which we have attempted to describe, it has a vital action energizing every portion of it, and it really *breathes*, as truly as animals do. An ingenious and philosophical writer says: "A few years since, if one asserted that trees had lungs and breathed, he would have been held to an argument to prove it; just as a few years earlier nobody would have believed that a fish's gills, and the leaves of a tree, and the lungs of a beast, all performed the same office, that of aerating, or airing the blood or sap.

"The soil breathes. How does it breathe? Its circulating fluid, the blood of the soil, is water; this comes to it from the air, and is already aerated, (that is, filled with air.) This soon loses its gases by contact with the soil, just as the arterial blood fresh from the lungs, loses its oxygen when passing its circuit in all parts of the body. The blood comes back to the lungs for more oxygen, but the blood of the soil cannot do this, so *we must let the air in*, to come in contact with it."

From this interesting exposition of nature's workings, the gardener will see the necessity for "stirring the soil as deeply as practicable during droughts, but not to interfere with the roots of growing plants,—so that a deep and light soil shall invite a free circulation of air beneath the surface. Hot air, the moment it passes beneath the surface becomes very moist, from the water which it originally contained, and it deposits it; thus not only airing the soil, but adding to its moisture. Cold air can hold but little moisture, but hot air dissolves an immense quantity, which it deposits when it cools, or on cool surfaces. Who has not noticed, of a winter's day, a locomotive leaving behind it a snowy cloud of vapor, like a comet's tail, often floating for a minute after the train has passed? Think of this, and watch the steam car on days when the hot breath, just as full of water as in winter, is puffed out into the eye of the sun, and not steam enough shows to make a shadow, it is so quickly absorbed by the air."

These general remarks are sufficient to suggest to any observing and reflecting person, how he may secure at small cost, a garden plot that will give him scope enough to raise all the fruits and vegetables that a family needs for its own use. It will require some labor, and thought, and care, and so it will if he plow his fields, builds his house, or sells his merchandise. But the soil, once brought into condition, and followed by generous dressings and clean culture, it may be heavily cropt for generations without impairing its fertility.

MORE PROFITABLE FARMING.—A Framingham, Mass., correspondent notices another instance of profitable farming in that town. Three years ago Mr. M. M. Fisk bought six acres of rather light land, on which he has expended for purchase money and labor $402. The value of the three crops—potatoes, corn, and rye seeded, with grass—has amounted to $900.

DO SHEEP IMPROVE PASTURES?

There have been great improvements in the culture of sheep within the last twelve years; in the texture and quantity of the wool, and in the quality of the flesh. Their numbers have greatly increased—to a surprising degree in the West—and even in New England an unusual attention has been paid to them. The increase in 1865 was over *four millions*. In 1860, the number of sheep was estimated at 22,471,275, and in 1866, at 32,695,797—a gain of 10,224,522. Those who have engaged in their culture have found it sufficiently remunerative to encourage them to go on. The introduction of machinery into this country to manufacture delaines, and goods of a similar character, has made a demand for long wools, and especially that of the silky cotswold, which have been found as profitable as the fine merino wool. On the other hand, the demand for the merino in the great West, in Pennsylvania and Ohio, has been so great as almost to outstrip supply, so that in either of these branches of sheep culture, there is no present prospect of lack of demand.

Our people are also educating themselves to the use of mutton as food, instead of so much beef and pork. It is admitted, we believe, by all who have given attention to the subject, that mutton is a wholesome and nutritious food. It is certainly easily and quickly brought to maturity, and, unlike beef, gives an annual return in wool, which pays a portion of the expense of raising as it goes along. Taking these points into consideration, it is the opinion of many persons, that the culture of sheep may be made profitable in most of the towns of Maine, Massachusetts, Rhode Island, Connecticut and New Hampshire. It is already so in the latter State, and in Vermont.

It is thought by many persons who have had the care of sheep and cattle on the same farm, that where eight or ten head of cattle are kept, *six sheep* may also be added without additional cost to the owner; that is, that the *manure* which they leave on the pastures, and in their pens, and the income from the sale of lambs, will pay the cost of keeping and care, and leave the annual clip of wool and the carcases of the sheep as clear gain. There are some reasons for such an opinion, and granting, for the present, that it is sound, let us see what such a practice would do for our farmers. We have in New England, as by Commissioner's Report, 183,942 farms; six sheep to a farm would give 1,103,652, which, at $5.45 per head—the average price in February, 1866—would give a capital of six millions fourteen thousand, nine hundred and three dollars, and forty cents. If the average clip of wool was three pounds per head, at fifty cents per pound, it would give one million six hundred and fifty-five thousand four hundred and seventy-eight dollars! A nice sum to be divided annually among the farmers of our rough climate and rocky hills!

If the points suggested above are correct, or approach correctness, whatever is said or done to discourage the culture of sheep in New England may have an unhappy tendency upon the interests of the farmer. We have been led to these remarks by reading the statement of Mr. Matthew Smith, of Middlefield, Mass., as given in the report of the Secretary of the Middlesex Agricultural Society, for 1865. The latter adds: "One of your committee said to him that perhaps it would be a good thing to stock some brushy pastures with sheep for the purpose of improving the pasture. He answered by saying that you and I have heard quite often, the last five years, that sheep would improve pastures; but don't you believe one word of it, for I have always kept a large flock of sheep, and I know that it is not so."

We have no doubt but the statements made by Mr. Smith are entirely true, in his case; but "one swallow does not make a summer," nor does one experiment annul many others, made under different circumstances. We think it is a well ascertained fact, that *sheep do generally improve the pastures upon which they feed.* The history of the improvement of sheep, is the history of the improvement of the *land* upon which they have fed. The history of the *South Down* is the history of the improvement of the valleys of the Downs. Few pastures exist which afford finer feed for sheep than the famous "*Downs*" of England, a tract of land about eighty miles long and six wide, which was of chalk formation and nearly worthless. From the hills and valleys of the *Downs* came the famous *South Down* sheep. The change wrought upon these Downs by pasturing sheep upon them, enclosing and cultivating them, has been wonderful. Sheep that were previously gaunt and slab-sided, with light and comparatively hairy fleeces, soon yielded the

sweetest mutton, weighing fifty pounds per quarter, and in a large flock gave fleeces whose average weight was eight pounds each.

The improvement of *Cotswolds* is no less remarkable, and the once bleak and barren hills from whence they take their name, have been so improved by the culture of sheep upon them, that they attain a greater weight at twelve and fourteen months, than they formerly did at three and four years old!

If not greatly overstocked, pastures which were decidedly poor when sheep entered upon them, have gained in fertility from year to year. A portion of a farm in Northfield, Mass., was proverbial during many years for the abundance and richness of its feed. It had been pastured for a long time, alternately with cattle and sheep. One half this pasture was sold, fenced off and fed by cows. In a few years the part sold had essentially deteriorated, while the other, fed as it had been, remained as productive as ever, although both pieces were grazed by about the same amount of stock.

We are well acquainted with a pasture near the sea coast which many years ago was an exceedingly foul piece of land—abounding with a great variety of bushes, among which were the barberry and many climbing plants, and so closely laced and intertwined by the wild rose, that they formed an almost impenetrable jungle. Twenty years afterwards we saw the same pasture with a flock of sheep on it grazing upon a close, compact turf, covered with short, sweet grasses, and *without a weed or bush of any kind upon it!*

"How has this reclamation been accomplished?" we inquired, as we stood looking upon it.

"*By the sheep*," said our informant.

"Without plowing and seeding?" we asked.

"Yes, *by the sheep alone*," was the reply.

The pasture was quite uneven and rocky, but the sheep had exterminated every vestige of wild plants, and clothed the surface with fresh, rich, perpetual herbage.

In a report by a committee of the House of Lords, in England, in 1829, it was said: "All farmers testify that *sheep raising is absolutely indispensable to successful farming*; their *manure is necessary to preserve the fertility of the soil*; and that without them the whole kingdom would in a few generations be reduced to utter barrenness and sterility." Their importance, in this point of view, seemed to be generally conceded by the members of the great *Wool Grower's Convention*, which we attended at Columbus, Ohio, in the winter of 1864.

A report in the *Plymouth County Transactions*, says: "Some of the finest examples are afforded here of the effects of feeding sheep upon pastures that have become exhausted of nutritious grasses, and grown to bushes, brakes, briars and moss. I have seen pastures that had become almost worthless, but now green and smiling as a lawn, with every niche among the rocks covered with the richest pasture grasses, and not a blackberry vine, wild rose bush, mullein, or other worthless plant in sight."

In a report by Dr. JOSEPH REYNOLDS, of Concord, Mass., on this subject, he says: "Experience shows that sheep walks, instead of becoming exhausted, uniformly grow better, and that one of the most effective means of destroying the bushes and mosses, and bringing back white clover and sweet grasses to an exhausted pasture, is to turn upon it a flock of sheep."

Mr. RICHARD S. FAY, long a member of the old *Massachusetts Society*, and *of the Board of Agriculture*, who gave the most intelligent attention to the culture of sheep, said he had "constantly under his eye a one hundred acre lot upon which cattle a few years ago *could not live*, that now maintains in good condition a large flock of sheep; and the improvement of the pasture has been so great that a dozen head of cattle, besides the sheep, do well upon it." Mr. Fay's pasture was a rather dry and very rocky piece of land, and was reclaimed entirely by the sheep.

This change, however, can only be effected gradually. It will not do to turn a large flock upon the pasture, and keep them there, but enough to cause the sheep to crop the bushes *because they cannot get all the grass they want*. This may be done at first for a week at a time, or longer, as circumstances may exist. In this way the sheep commence the destruction of the bushes at once, by eating off their leaves. As these disappear, the sun and air is let into the sod, the rich waste of the sheep falls upon it, scattered everywhere in minute portions, and it soon springs into wonderful fertility, bringing the richest perpetual grasses and gradually driving out all the useless plants.

As the latter disappear, the grass increases, until the pasture that would support only twenty sheep will sustain one hundred in good condition.

Mr. Smith's sheep did not reduce the bushes, probably because they found all the good grass they wanted. He should have slightly *overstocked* the pasture for a week or two at a time, and we have no doubt he would then have seen the work of destruction going on.

TARIFF SAMPLES OF WOOL.

We are among those who are very anxious to believe that the manufacturers acted in good faith in their agreement to work in concert with wool growers in securing such rates of duty as would promote the best interests of both parties to the contract, and that they have acted throughout in accordance with the terms of that agreement. The appointment of a leading wool merchant of Boston, by the Secretary of the Treasury, as the sole agent of the government to prepare the samples of wool required by the new tariff law, has given occasion to those who doubt the integrity of the manufacturers to raise the cry of "sold again." In a communication to the Vermont *Farmer* by "J. W. C." of Springfield, the appointment is spoken of as "an outrageous and flagrant wrong to the wool-growers," and some of our own correspondents have spoken of it in the same bitter terms, and asked why the wool-growers were not represented on so important a commission. But as Mr. Bond is neither a manufacturer nor a wool-grower, but a buyer and seller, and unquestionably well qualified for the duties of his appointment, we have held on to the belief that both he and the government were disposed to do justice to the letter and spirit of the law, and to both parties whose interests are affected by it, and we are glad to see by the *Rural New Yorker* that a letter has been received from Mr. McCulloch, Secretary of the Treasury, in which he gives assurance that "the samples when prepared will be open to the criticism of all parties interested, and should it be discovered that, from any cause, a mistake has been made in the classification or arrangement of the distinctive samples of wool and hair, the Department will not be slow to correct it." Upon which Dr. Randall comments as follows:—

Without in the least impugning the good faith of the Secretary of the Treasury, or the integrity and other qualifications of Mr. Bond, we have to say that so far as *we* possess any information in the premises, no accredited agent of the wool-growers was consulted in making this appointment; and that when the tariff on wool and woolens was drawn up by the Committees of Growers and Manufacturers, and one of the Commissioners of Revenue, in the winter of 1865-6, that Commissioner (Hon. Stephen Colwell,) assured us that both interests would be represented, and equally represented, in the Committee to select samples—that it would only be necessary to apprise the Secretary of the understanding to ensure its adoption by him—and that he (the Commissioner) would see that he was so apprised. As the bill did not pass during the session of 1865-6, it is very probable the Mr. Colwell did not inform the Secretary of this understanding, and Mr. C. had nothing to do with the matter during the last session of the Thirty-ninth Congress. But, without knowing the fact, we take it for granted that the members of our Committee in Washington called Secretary McCulloch's attention to the arrangement.

Secretary McCulloch will be asked to submit the samples prepared by Mr. Bond to the examination and revision of a Committee of Growers and Manufacturers, selected by themselves, *before the samples are adopted as standards;* and if he accedes to this, his plan will have the same effect with the original one. We cannot suppose that Secretary McCulloch will refuse to comply with a request so palpably just and reasonable. His language above quoted ought to be understood as substantially implying so much. His decision in the matter will be placed before our readers as soon as it is received.

We think that we cannot misapprehend the views of the wool-growers of the country in acting on the hypothesis that they will not rest satisfied with having the entire selection of the custom house samples of wool confided to one man, whatever his qualifications—or to any body of men in which the growers are not equally represented with any and all *opposing* interests.

For the New England Farmer.

DESTRUCTION OF TREES AND SHRUBS.

Messrs. Editors:—In a late communication to the Farmer, I spoke of an evil practice which I fear is still very common, and which, as I hope to show, is far more mischievous than it is commonly considered. I mean the thoughtless and barbarous practice of cutting off and destroying the trees and native shrubs which, in a thousand places in the country, naturally border the old roads.

I now wish to state, as briefly as possible, some reasons why this practice should be discontinued, and why and how the mischief done, should, whenever it is practicable, be repaired.

1. It impairs the beauty of the roads.

2. It diminishes the beauty and attractiveness of the town or village.

3. It makes the roads uncomfortable, by leaving them open to the sun and exposed to the winds.

4. It increases the drought of summer, and the violence of the winds at all seasons.

5. It exposes the roads to be filled with snow drifts in winter, and to be gullied by the rains in the end of winter and in spring.

6. It diminishes the fertility of the land.

7. It tends to make our winters colder and our springs later.

8. It suffers water from the spring rains to be wasted by rushing off in floods, carrying with them the best of the soil, instead of sinking into the ground about the roots of trees and bushes.

9. It diminishes the showers in summer.

10. It keeps the little birds at a distance from the fields, gardens and orchards where they are needed.

11. It is bad economy, by destroying trees which are becoming more and more valuable, from year to year, for fuel and use in the arts, and for the fruits,—acorns, chestnuts, wild cherries, walnuts, beechnuts, butternuts, hickory nuts, shagbarks,—and by destroying the shrubs and undershrubs which produce our delicious and useful berries—whortleberries, blackberries, raspberries and others,—and the delicate hazelnuts.

12. It diminishes our happiness by lessening the enjoyment and the health of our wives and children, and of those helpless and dependent creatures which live for us,—the domestic animals and the birds,—by robbing them of the shade and shelter afforded by the trees, and

13. It does much, in many other ways, to diminish the cheerfulness and agreeableness of our homes.

Our climate has changed for the worse since the original settlement of this country. It is one of more fierce extremes. The hills, which, clothed with their forests, are the natural defence and protection of the plains, have, in many places, with strange and thoughtless improvidence, been stripped and laid bare, and the storms howl and rage over them unchecked. On the plains, the old, primeval trees have been cut down, the groves thinned, the thickets weeded away. Our broader fields are dryer and hotter in summer, and the winds over them are more unbroken, and hence, at all seasons, more violent. Delicate plants are cultivated with more difficulty than formerly. Cereal crops are more liable to be injured by drought. The deterioration is constantly going on. The thinning of a narrow border, the cutting down of a single tree, adds something to the evil.

All that can be done ought to be done, and very much may be done, to check it. The bare hill tops and their steep sides may again be covered with trees. The poorest lands, which hardly pay for cultivation, may be given back to the forest by careful planting. All the surface that can be found unoccupied, every little nook that can be spared, should be clothed or allowed to remain clothed, with native or foreign trees and shrubs.

A bare, unprotected field has the winter's snow swept off and so freezes to a great depth, and, by its slow thawing, materially retards the spring. A surface carpeted with undershrubs, such as whortleberry bushes, arrests the falling or driving leaves and early snow, and forms a fibrous blanket, to keep in the warmth of the earth and keep out the cold. Thus protected, the earth below this blanket does not freeze; the roots of the plants, large and small, forming a porous, spongy mass, of considerable depth, the loosened earth, underneath, receives and keeps the dissolving snow and trickling rain, laid up, as in a reservoir, against the hour of need. The early flowers show that spring comes first to these sheltered spots.

Every thicket, every clump of bushes, every row of trees, especially every broad ribbon of mingled trees, bushes and undershrubs, does something to soften the violence of the wind, to arrest the mists and raineloud, and to store up a little treasure of moisture, like that just described, from the dissolving snows and the rains of spring, and thus provide a source for daily evaporation, to mitigate the heat and droughts of summer.

Whoever can look back for half a century upon almost any country town in New England, may remember many a little perennial rill of former days which has now disappeared entirely, and many a brook which once ran full through the year, but which is now, in the dry season, reduced to a diminutive runnel, whose music has ceased, and whose course is indicated only by scattered, stagnant pools or by a greener line through the meadow. The change from worse to worse, from dry to dryer, is still going on.

To stay the evil, to restore the rills, again to fill the brooks, to bring back a softer climate, will require the co-operation of all public spirited persons. Every one must compensate for the mischief he may have done. Whoever has cut down a single tree, young or old, must set out two to take its place; whoever has uprooted an old, broad-headed tree, such as an ancient chestnut or oak, ought to feel bound to plant at least ten young ones. Whoever has been, directly or indirectly, instrumental in defacing the roadside, by destroying such a border as we have been speaking of, ought to hold himself responsible for another as beautiful and as precious. Whoever has an acre of land, the cultivation of which pays poorly, will, if he has an eye to his interest, plant it with such valuable trees as will flourish there best; or, if it lie on the edge of a forest, he will let it plant itself with acorns, seeds or nuts from the forest, only taking care that the young trees shall not be nibbled down and killed by cattle or sheep. The owner or owners of a bare, unsightly hill must assume wisdom enough to manage that with equal foresight. The reward will not be the mere gratification of a sense of the beautiful. While labor is so dear as it now is, it must be economy to raise eighty bushels of corn on an acre, instead of thirty, to cut three tons of hay instead of one, both of which will be the natural consequence of

spreading the manure, and the labor upon nine acres, instead of twenty-five.

Wood for fuel, timber for building, materials for furniture and for the use of all workers in wood, are becoming every year scarcer and dearer, and trees upon the hill side or the road side, on the plain or in the valley, will be "aye growing," while the planter is sleeping, and will continue to grow when the planter shall be lying with his forefathers under their shade.

Then we must not forget the birds. We cannot get on without them, and it seems a great mistake to make no provision for them, when their co-operation is so essential to us. A few of the insects are our friends, and may make honey or spin silk for our enjoyment. Most of them are enemies, ready, and, in the absence of the birds, able to take possession of or to forestall the fruits of our orchards, the vegetables of our gardens, the crops of our fields, even the trees of our forests. We must court the alliance and friendship of the birds. We must have, near our fields and gardens, copses and thickets to invite and shelter them. We must protect them against cats and boys and idle sportsmen. The birds are always ready to be our neighbors. They work by us and for us, and do not like, and ought not to be obliged, to go far for their homes. They are pleasant and social neighbors. It is pleasant to see their delicate shapes and graceful motions, and to hear their songs. Their ceaseless activity is a perpetual lesson to us. It is pleasant to have meadows, wheat, peas, and turnips that have escaped the fly, and to gather apples and pears with no other marks upon them than the remnant of the blossom. These pleasures and advantages are only to be secured by the constant co-operation, throughout the year, of the birds. We shall soon see the necessity of increasing their numbers by importing them from Europe.

Whoever has had the good fortune to spend a summer in Old England, must have brought away in his memory, many charming pictures of rural scenery unsurpassed elsewhere. One beautiful element in this scenery is the hawthorn hedges, flowering in spring, the resort and home of the birds, varying with the seasons, sometimes a little ragged, always picturesque. In the agricultural counties you have to look in the hedges for the wild shrubs and trees, and along their borders for most of the wild flowers. Nowhere is there anything to surpass these hedges. In New England, we have nothing yet to take their place. They protect, soften and ornament the field they defend. The nearest approach to their beauty and use in this country, is given by the borders to the roads and lanes which I am endeavoring to save.

A traveller entering one of our New England villages, and, as he looks down upon it, observing the church and the school house surrounded by shady groves, lines of stately forest trees along all the great roads, so that the children going home at noon, may walk every where in the shade—the by-roads and lanes bordered with shrubbery and trees, like the hedges and hedge-rows of Old England, and the hills, round about, crowned with forests, would involuntarily say: How pleasant! how beautiful! and would be likely to think—How fortunate and happy the children, how thoughtful and prudent their fathers!

If we wish to dwell in a more genial climate, softer in winter, and shadier, cooler and moister in summer, in towns or villages more beautiful to the eye of taste, and more attractive and agreeable to the hand of industry, we must take care of the forests, and of these edges, relics of and substitutes for the forests, wherever they are to be found.

If you can find space for me, I should like, in another paper, to say a few words about the trees and other plants which we ought to take measures to retain or to reinstate.

Boston, April, 1867. G. B. E.

For the New England Farmer.

WHAT CAN BE DONE TO SAVE THE APPLE.

There are those who, believing in periodic states of health and sickness in the vegetable kingdom, hold that the apple is subject to a partial failure for a series of years, and then, from unseen causes, to a return to its former productiveness. But science throws too much light upon our ways for us to grope along thus blindly. Man has the same control over the culture of trees that he has over the culture of corn, wheat, or any other annual. All are subject to the same laws and affected by like causes. There is this difference, however. With animals, effect follows cause immediately and is readily seen; while those that affect the health of trees may be at work years before any thing is noticed by the unpracticed eye.

As trees are the growth of years, it requires more foresight and thought to cultivate them than it does the short-lived plants and vegetables. Now that the peach has failed, it is easy to find sufficient reasons for its failure; and may not the same general causes which wrought its destruction be now at work upon its more hardy companion, the apple, rendering it unprofitable and threatening for it a similar fate? I believe all the evils that have befallen the apple have come through the agency of man. Through the same agency must come the remedy. If ever an "ounce of preventive is worth a pound of cure," it is now in the incipient stages of a failure, before diseases develop into epidemics. So wide-spread already are the causes of the evils, that isolated individual effort can effect only partial cures. Radical and complete cure depends upon the combined action of the many. Still what the

individual can do, must by no means be neglected.

The causes of the present low condition of the apple tree may be classified under three heads: want of protection against climatic changes; of defence from insects, and poor and injudicious culture.

Protection from Climatic Changes.

This is the first point to be aimed it, for if it cannot be secured there is little probability of success, however carefully the trees may otherwise be treated. Florists may dwell upon the advantages, nay, the necessity of producing trees and plants adapted to the climate; and propagators of new varieties may claim they have achieved that desirable end, yet experience proves that without some protection, furnished either by nature or art, there is no certainty of a yield with any kind of fruit. Varieties of fruit that were once perfectly hardy, after a while fail to bear up under the rigors of our climate. When all the conditions of growth are perfect, I see no reason why fruit trees should not bear moderately every year. The very fact that fruit buds form and blossoms appear, proves there is a struggle to produce fruit; yet frequently recurring failures show conclusively that there is something radically wrong in their culture.

More than seventy years ago scientific men noticed changes in our climate, which are generally ascribed to the destruction of our forests. Their removal has opened the country to more intense action of the frost, wind and sun, causing more frequent changes in the weather, and greater extremes. The heat of summer extends further into autumn, which favors an untimely swelling of the fruit buds; the weather of modern winters is more inconstant than when the country was more densely wooded; the winds being more variable, snow is less permanent, and the ground is more exposed to the action of severe cold,—to alternate freezing and thawing. These extreme changes frequently kill the buds and injure the trees themselves. The cold of winter is prolonged later into the spring, and hence cold storms and high winds often occur while the trees are in blossom, and are, I think, the chief cause of failure of fruit in seasons of abundant bloom.

In Europe the blighting effects arising from the removal of the forests, and the benefits of their restoration, upon tender vegetation, especially upon fruit trees, have been fully demonstrated. When the wholesale destruction of the primitive forests of this country shall cease, or the waste places be again covered with trees to a degree that will restore in part or wholly the former equanimity of the climate, is a subject involving combined or governmental action, and beyond the scope of this article. The question now claiming our attention is, not what the government, but what the individual can do to ameliorate the effects of the climate upon his trees? It may be answered briefly, plant all fruit trees not in single exposed rows, but in large orchards, and surround them with belts of evergreens. Whoever is aware of the effect of forests in equalizing the temperature and in breaking the force of the winds, will at once see that the trees of a large orchard will materially protect each other, and that the benefits of two or three rows of evergreens must far exceed the labor of planting them and the land they occupy. In the cultivation of trees, valuable hints may always be derived from a close observation of nature. It is one of her laws to protect the roots with a layer of dead and decaying leaves, which tends to equalize the temperature of the ground, keeping it cool, moist and light in hot weather, and warmer in winter. The amount of moisture required by a tree in full foliage and laden with fruit, is immense. Can trees obtain their full supply that are trained to grow high, with nothing upon the ground to check the evaporation caused by the direct rays of the sun and the dry, hot, parching winds? often, too, with some cultivated crops drawing the nourishment the trees should have. Is it a mystery that the fruit of a tree thus situated withers and falls, frequently? that, while maturing one crop, it cannot properly prepare for another? And as the foundation of a fruit crop must be laid the year before, is it strange that its efforts result in weak buds, that weak buds should produce feeble blossoms, and that feeble blossoms blast, or develop inferior fruit?

Protection from Insects.

Without the aid of birds, the efforts of man in protecting his trees from these pests are of little avail. Trees collected in orchards present greater inducements for birds to build their nests than when standing singly; their prey will always be near them, and they will destroy more than if they traversed the whole farm for it. If mischievous boys and lawless gamesters were kept out, a numerous and efficient guard of these valuable allies might be relied upon. The occupants of poultry houses and coops located in the orchard will render no little assistance in the great work of protection from insects.

Good Culture.

By having all the fruit trees in orchards, the rest of the farm will be free to the mower, horse-rake, plough, &c.—a consideration of much importance in these days of farm machinery. Securely fenced, it will also be preserved from the browsing and other depredations of farm stock. Neither will one be obliged to make the circuit of the farm to do a little pruning, pick up the windfalls, or destroy the caterpillars. The site of an orchard need not be the smoothest and best part of the farm,—a hill side or a rocky piece is full as desirable a location.

I would have an orchard, when the trees are fully grown, occupy all the ground; yet not

so thickly as to crowd each other. It should be laid out with avenues at convenient distances for teams to pass. It implies thorough preparation of the soil before setting out the trees. Too much time and care cannot be given to the selection of trees, and it is best they should have been grown in nurseries in the vicinity, so that they be hardened both root and branch to the climate. The best specimens are cheapest in the end. Few farmers can afford to buy poor trees. If one is not fully competent to select trees, it will be money well invested to hire some experienced person to do it for him.

In training, the trees should be allowed to branch as low and limbs to hang as near the ground as they will. Low heads facilitate the picking the fruit, pruning, killing insects, and they shade the ground better during our hot summers. By the time the trees are beginning to bear, all plowing and cropping should cease. Whatever grows may be cut and piled under the trees or left to die and fall where it grows. This, with the leaves will make a mulch to prevent excessive evaporation during summer and keep the ground warmer in winter—thus giving a carpet such as nature spreads for the protection of our groves and forests. Plowing having ceased, the roots can take their natural position near the surface.

The growth of the trees should not be forced. Light and frequent applications of fertilizers, rather than heavy and occasional ones, are to be preferred. Ashes and mineral composts are preferable to animal and highly stimulating manures. Where only fruit is taken from the land, but little manure is required to maintain a moderate, even and hardy growth, which is all a tree can bear with safety, where it is to be tried by the rigors of New England winters.

Regarding the cultivation of trees in this light, notwithstanding recent failures, the management is plain and easy. It is only when we depart from the simple laws of nature, by attempting too much, or by failing to come up to her requirements, that labor and difficulties increase, and disappointments multiply. The apple is worthy of being considered an important part of our diet, and should be the pride of our Northern States; and on our rough, rocky lands, remote from market, should be one of our most reliable and profitable crops. And is it too much to hope that the same skill and intelligence that has brought this fruit to its present degree of perfection, can prevent its deterioration? N. S. T.

Lawrence, Mass., Feb., 1867.

CALEDONIA COUNTY, VT.—The Fair of the Agricultural Society of this fine farming county, is to be held, as we are informed by its Secretary, I. W. Sanborn, Esq., at St. Johnsbury, Sept. 24, 25 and 26, 1867.

AGRICULTURAL ITEMS.

—The Chinese, it is said, use wooden, instead of earthen flower pots.

—Specimens of sponge prepared for beds and pillows, said to be equal to the best feathers, were lately exhibited to the New York Farmers' Club.

—The average yield of wheat in England, appears by official returns to be 29 bushels per acre; barley, nearly 38; oats, 46½.

—The great Illinois farmer, M. L. Sullivant, is preparing to set 400 miles of Osage Hedge on his new farm in Livingston county.

—In English markets, wheat raised in America and in various countries of Europe, commands a higher price than home-grown, while English grown barley bears the highest price of all.

—A Fon du Lac correspondent of the *Prairie Farmer* writes that men purchased sheep there, three years ago, at $4.50 to $5.00 each, and now are anxious to sell at $2.50 per head, and no sale.

—The bill appropriating $20,000 for the erection of a building for the accommodation of students of the Michigan Agricultural College was defeated in the lower house by a vote of 33 to 58.

—A correspondent of the *Western Rural* took a pailful of soft maple sap, and a pailful of hard maple, and boiled down the two carefully, and could not see any difference in quantity, but the soft maple sugar was the lightest colored.

—A man in Ohio bought a nice colt, but afterward discovered she was covered with blue lice. He applied coal oil, and the results were beyond his expectations. In 24 hours not a louse was left; ☞nor a filly, either.

—Hon. M. P. Wilder has discovered that pencil marks on strips of zinc for tree labels, which can be readily rubbed off when first written, grow more distinct and durable with age, and after a few years can be erased only by scraping.

—Instead of taking a chilled lamb to the house to warm it, a St. Albans, Vt., correspondent of the *Country Gentleman* says, "put half a dozen hot bricks in a bushel basket, cover over with fine straw, and put the lamb on the straw, and he will think it is summer in a few minutes."

—The California *Farmer* congratulates the people of that State upon the increase of flour and the decrease of gold in late exportations. Formerly nearly every steamer carried from one to two millions of bullion; on Monday last only about two thirds of a million, while the freight on flour is about $30,000 each trip.

—We are sorry to learn by a communication in the Iowa *Homestead* that for five or six years the canker worm has been extending its ravages in Monroe Co., Iowa. Last summer the writer visited Eddyville, in the Des Moines Valley, and says, "As far as the eye could stretch forth, up and down the river for miles, the trees were entirely stripped, and the twigs and limbs contained only

the skeletons of leaves shrouded with long ropes of the voracious gormandizer—the canker worm. It looked as if the messenger of death had wended his path along the stream and wreaked his vengeance upon that lovely valley."

—The Legislature of Indiana have adjourned without locating the Agricultural College, although the county of Hancock offered $300,000 to have it fixed at Greenfield, their county seat. The five years specified by Congress expires before the Legislature meets again, and it is said the State forfeits her $600,000 of the college fund.

—The Monthly Report of the Agricultural Department for February, gives a statement by which it appears that the annual yield of milk in the famous dairies of Ayrshire, Scotland, is 425 gallons per cow. The Hon. Zadock Pratt, of New York, in a dairy of 80 cows, reports the yield at 584 gallons.

—Ephraim Harmon, Saco, York County, Maine, writes to the New York Farmers' Club that twenty years ago, he cut fence posts from the tops of hackmatack trees in August, and they are still sound, though set in sand where naturally posts soon rot. Since then he has cut posts from the same kind of trees in winter, and they did not last five years.

—After the horse is nine years old, a wrinkle comes on the eyelid at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year over nine. If, for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen, &c. So says an informant of the *Field and Fireside*.

—An English correspondent of the *Country Gentleman* says, "All our fatting cattle get four pounds per head daily of linseed cake, when first put up, increasing the quantity to eight or ten pounds to finish off; this in addition to plenty of roots. The very best linseed cake we get comes from New York, Boston, and Philadelphia, and costs here now $60 per ton.

—In some remarks on the spring care of ewes, Dr. Boynton of the *Mirror and Farmer*, "goes in" for feeding roots, and says, "If you haven't turnips, feed potatoes, and if you haven't these, buy some. If you haven't the money with which to buy, sell half your sheep for what you can get, and then get something on which to feed the other half, and you will make money by the operation."

—It is suggested by W. C. Strong and D. S. Dewey in the New York *Horticulturist*, that red cedar posts may protect grape vines trained around them from mildew. Col. Dewey says his vines trained on these posts, have been exempt from mildew and insects; and those growing nearest to the post have surpassed others in general healthfulness of appearance and productiveness.

—To save his face from the whisking of his cows' tails, while milking, a Herkimer county, N. Y., dairyman stretches a stout wire across the stable, immediately back of the cows. In the brush of each cow's tail he fastens a small iron ring. A hook upon the wire secures the offensive member out of the way of the milker. As soon as the cow is milked, the hook is removed from the ring, and the animal turned out of the stable.

—A dish-washing machine, of the size of a large tub, containing wire racks, &c., costing from $8.00 to $15.00, on castors, which will wash four dozen plates, or two or three dozen milk pans, in ten minutes, and requiring no wiping, and never breaking any, has excited the admiration of the members of the New York Farmers' Club. Now, girls, for white fingers and delicate hands while doing your own house work.

—The Farmers' Club, at Little Falls, N. Y., in a late discussion were nearly unanimous in the opinion that it does not pay to raise roots on a large scale for cattle feeding, at present prices of labor. Mr. Lewis whose opinion was not controverted, thought that early cut hay—grass, cut just as it was coming into flower and nicely cured,—was the best, as well as the cheapest, food for milch cows in winter.

—An experienced grape grower of Hartford, Ct., Col. Dewey, says in the *Horticulturist*, that he thinks many of the ills of vine growing are directly traceable to the restraint placed upon our free-growing native varieties. He asks, are not our trellises too procustean, and our methods of confinement too rigid? Do limb and spray have a fair chance at full natural development? He looks upon *motion* as a necessary element in healthy vegetation of all kinds.

EXTRACTS AND REPLIES.

RAISING CALVES AND COLTS.

Calves may be raised on skimmed milk cheaper and better than if fed with new milk—One good calf in the fall is worth more than two poor ones—No stock can be soiled so profitably as calves.

Do these propositions need argument or proof? Calves raised with new milk are fed from eight to twelve weeks or longer, and then entirely deprived of it. In the country, away from any market, skimmed milk is of far less value than the cream; consequently a calf can be fed on skimmed milk longer and in greater quantity, without increasing the expense, and thus he becomes larger and better. Feed regularly as to quantity, quality and time. Feed liberally, remembering that by skimming the milk it has been deprived of its greatest cash value, and some of its nutritive qualities. But don't skim the milk too closely; in the morning skim a small pan of milk that was drawn the night previous; at noon another small pan of the same milk, and at night take a pan of morning's milk. Three meals a day are better than two. The milk skimmed as above directed will be sweet, and though the greater part of the cream, and that which will make superior butter will be taken, it will not be deprived of all. As soon as the calf is old enough to eat, a little shorts, fine feed, or something of that kind, may be given dry, feeding as regularly with that as with the milk. Corn meal is not good in any form.

Keep the calf in the barn, out of the sun, on a floor well covered with sand or other absorbents,

to be removed as soon as wet. This will keep the calf from being lousy, and increase the compost heap rapidly. Feed green clover, corn, or anything else that is raised for cows, and better calves than are usually raised on new milk will be the result. If the skimmed milk of one cow is insufficient, sell one calf and give the milk of two cows to one calf, and it will be worth more than two if not well fed. Calves have been raised in this way with satisfactory success. Who will try it, and report? Don't be afraid to give a little milk after the calves are "old enough to wean." They must have something to eat at all times of life, and nothing is better suited to their natures than milk.

A few quarts of milk each day fed to a colt during the first winter of his life, will increase its size and consequently its value, much more than the cost of the milk. Those who are afraid to feed colts with grain, need not fear any injury from skimmed milk, which is better for the growth of the colt than grain. Will some one try this, and report? ZENAS.

New Hampshire, March, 1867.

TRANSPLANTING APPLE TREES.

In the weekly FARMER of March 30, a subscriber desires information in relation to setting an orchard this spring. By experience in this region we find the better way is to set the trees, if not quite large, three and a half or four feet apart in a well fenced nursery, first having the ground deeply tilled and suitably manured. Thus set, you will more easily take care of them and more successfully fight the different kinds of worms and insects. The trees will do much better there than in an orchard, exposed to injury from teams when tilling the land, and from the browsings of the stock when in pasture. When the trees have attained a proper size, have the holes well dug and prepared, then take them up carefully and set them out with as little exposure as is convenient, pruning the top and roots properly, and they will do much better, and come into bearing two or three years sooner.

I think the following the best kinds for this latitude, for home consumption or market: For winter,—Newton Pippin, Esopus Spitzenburg, Rhode Island Greening, Northern Spy, Tolman Sweeting and Sweet Greening. For fall use,—Twenty-ounce-apple, Fall Strawberry, Holland Pippin, Williams Favorite, and Fall and Winter Pippins. For summer use,—Red Astracan, German Bough, Tart Bough, Harvest, King Sweet, Large Sweet Bough. J. KING.

Eagle Bridge, N. Y., April, 1867.

LIST OF PEARS.

Having been called upon somewhat frequently to advise in the selection of sorts, and having had occasion to observe some of the errors which have been committed by the inexperienced, I beg leave to offer a few brief suggestions, which may benefit those inexperienced in fruit growing.

Most people grow too many sorts. I have been sorry to see persons of small grounds and smaller means, search through the entire catalogue to find some sort which they had not already planted, rather than set more than a single tree of the very best, well-known sorts, which will succeed well under all circumstances. Applying my remarks more directly to pears—a fruit most desirable for small homesteads, both on account of the less room which they occupy, and of the superiority of the fruit—it may be safely affirmed that eight of the best sorts will furnish a family with a better supply of fruit than twenty-five selected with reference to novelty and fancy. Doubtless our distinguished pomological friends, Messrs. Wilder, Hovey, and others are conferring a great benefit upon the public by the cultivation and exhibition of two hundred varieties, but we who grow for profit must remember that the benefit is to be derived from the cultivation of the *few* sorts which have proved themselves worthy of a place beside the Bartlett and the Louise Bonne de Jersey rather than the many which are entirely worthless for any other purpose than to fill up the tables at the annual exhibition.

Among the first requisites are a thrifty growth of wood, and early and constant bearing. Some sorts which have for a long period been considered standard by expert cultivators, have never given any satisfaction to people in general.

Of this class is the Winter Nelis, which will not make a good tree without extra cultivation; and the Dix and Urbaniste, which exhaust the patience of the novice by their tardiness in coming into bearing. Some have been obliged to walk by faith and not by sight from twenty to thirty years before discovering a single fruit upon their magnificent Dix trees.

Other sorts have been highly recommended for what they have done in certain localities, while in other places they have entirely failed. The Beurre Diel is an instance. But without occupying too much space in the already crowded columns of the FARMER, I beg leave to submit the following list of pears for general cultivation, on village homesteads, believing that the sorts recommended are such as will prove successful in the hands of those least acquainted with pear culture.

On Pear Stock:—Bartlett, Buffum, Sheldon, Paradise d'Automne, Beurre d'Anjou, Lawrence.

On Quince Stock:—Beurre Gifford, L. B. de Jersey, Duchess de Angouleme, Doyenne Boussouck, Vicar of Winkfield. G. H.

Worcester, Mass., March 25, 1867.

OATS, CORN AND LINSEED COMPARED.

Please inform me through the columns of the FARMER, what amount of nutriment is contained in a bushel of oats, Indian corn, cotton seed and linseed, and where linseed can be obtained, and at what price for 100 pounds?

Which of the four named seeds is the best feed for milch cows, for producing the greatest flow of milk, and which the best for calves and lambs?

J. D. BOYDEN.

Conway, Mass., March 18, 1867.

REMARKS.—According to statements made by different persons, in different countries, it is supposed that in 100 pounds of oats there is from 5 to 8 pounds of oil; in same amount of Indian corn there is 5 to 9 pounds, in linseed, 30 to 35 pounds. This is an index of their respective values, only in part, because their other nutritive qualities may be more favorable to one or the other.

Linseed cake may be purchased at the agricultural stores in Boston, at from $60 to $80 per ton. Linseed cake produces a great flow of milk. For calves and lambs we should prefer oats, carrots, beets, or other roots.

PULLING WOOL—TICKS—CATARRH

My sheep pull their wool out in strings. What is the remedy for that, and running at the nose? What is the best remedy for ticks?

West Campton, N. H., 1867. W.

REMARKS.—Pulling wool out may possibly be traced back to feeding too late on frost-bitten grass last fall, or it may be caused by ticks. If by the

latter, use the tobacco wash, or the common mercurial ointment; but either with great care.

For "running at the nose," treat the sheep much as you would yourself or your child for "a bad cold." In this case, an ounce of prevention is worth several pounds of cure. Mr. Morrill says, remove to a warm shelter and give some loosening food or purgative medicine, merely for the purpose of aiding nature in its efforts to remove the disease. Dr. Randall remarks, that after having tried a variety of experiments on this disease, he does nothing for ordinary cases of catarrh in his flock, except to take particular care that their quarters are kept comfortable, and that they have a regular supply of proper food.

A TIGHT CELLAR.

In your issue of to-day, you give me directions for making tight the bottom of my tank, which I expect to profit by, and for which I am very much obliged; but it must be as necessary to have the sides tight two or three feet high, as the bottom. I am told by those who have tried it, that liquid manure will soon destroy cement. Is this so, and if so, what shall I do? You say, spread the clay on one side, one inch deep, then pound. At least, I suppose you would have me spread it all over one inch deep before putting on more. D. L. T.

Marlboro', N. H., March 23, 1867.

REMARKS.—A great many barn cellars are cemented on the bottom, and last for a long time. If you wish to preserve liquids to the depth of two or three feet, you will probably be obliged to lay up regular brick or stone walls, and cement them. Our directions were plain, we think, about putting on the clay. You must begin somewhere, so we said begin on one side, and added, "and *go on* until you get the bottom covered," &c.

TO PREVENT SOWS DESTROYING THEIR YOUNG.

I have often thought of giving my method of taming the vicious sow, so as to save the pigs, and as it is about the time to begin operations, I will give it so as to be understood, if possible. I have never known it to fail. When the pigs are due, watch the sow; she will generally begin making her nest from 6 to 12 hours before you see any pigs, and you can be all ready. Have a basket at hand with some fine straw in it, large enough to hold all the pigs you are expecting, with a few straps that will buckle easily and tight; keep close watch, and if on the appearance of the pigs the mother seems disposed to destroy them, put them quickly in the basket, and keep them warm. Cover the basket with anything at hand, and keep them in hearing of the mother until all is over. Then let two men take the sow and lay her on her side, and strap her fore legs together and the hind legs in the same way; put a small cord in her mouth with a slip noose on the upper jaw, make it fast to a stake or anything within three or four inches of her nose. Tie the hind legs back, so she cannot kick to hurt the pigs, and the fore legs forward for the same reason. Raise them from the floor so she cannot turn over, and when all is ready and you see she cannot possibly hurt them, put the pigs with her and leave them 12 hours, and if she is not satisfied turn her over and give her another lesson. It cannot hurt the sow if the legs are not tied too tight. I have tried it with the most vicious sow I ever saw, and have never known a pig lost where it has been tried. If you think it worth printing I may try again on some other subject.

E. W. ORMSBEE.

East Montpelier, Vt., March, 1867.

REMARKS.—This process is new to us, but if managed carefully has no objections on the score of cruelty, although 12 hours seems to us a longer period than is necessary to keep the animal in one position.

We do not think that the tendency of sows to destroy their young grows out of a vicious disposition, but from an unhealthy or morbid condition of the system.

Prevention is better than cure. Let the sow have constant access to the ground; plenty of space in her feeding and sleeping room; a variety of food, including some meat or fresh fish; a little and but little, fine litter on the floor where the pigs are to be dropt.

Accustom her to being handled, petted a little, and to seeing different persons about the pen.

Feed moderately, and treat kindly in every respect, observing the other rules suggested, and sows will rarely destroy their young.

DISEASED POULTRY.

I wish to inquire through the FARMER, what is the probable cause of, and cure for, a disease which is attacking my hens? I have a flock of bright, handsome last spring pullets, a mixture of Bolton Grey and Dorking. Within a few weeks one after another have sickened and died. We first notice a drooping of the wings and general weak appearance, and a swelling on one side of the neck, or partly on the breast, so that the hen is inclined to carry her head on one side. As the disease progresses, the comb grows dark purple, almost black, and in trying to walk she pitches forward, sometimes falling on one side. We had a rooster in somewhat similar condition last summer, which recovered. They are fed with dough, corn, and occasionally a few scraps, pick up a good many seeds from hay, &c., having free access to all parts of the barn, and out of doors, when they choose to go; also, plenty of fresh water. If you, or any of your readers, can throw any light upon the subject, you will oblige a subscriber. H.

Framingham, Mass., March 29, 1867.

REMARKS.—In cases such as you describe, a gentleman gave a hen one grain of calomel in a bread pill, and four hours afterwards 15 grains of jalap, repeating the latter for four successive nights. The cure was perfect.

A GOOD YOKE OF OXEN.

I have a pair of oxen that traveled fifty-six miles out and back, in five and one-half days, loaded one way with one cord of hard wood.

ANDREW RUSSELL.

Townsend, Mass., March 28, 1867.

SALT FOR THE POTATO CROP.

I planted a few potatoes last spring, for an experiment. I soaked sawdust in strong brine and put as much in each hill as I could hold in one hand. In a few hills, with the soaked sawdust, I put from one-half to a teacupful of salt. I wished to find out if it would kill the potatoes. Where the sawdust was, without the addition of the salt, the potatoes grew very rank, the vines spread out

on the ground, as there was not strength to hold them up, but when straightened up, some were nearly as high as my head. The potatoes were very large. It took but a few hills for a bushel. Where the salt was added they were not as large in tops or bottoms. It was evident that there was too much salt.

No manure of any kind was used last spring; the year before there was a little spread on the land. My little girl put from ten to thirty sunflower seeds in a hill, but not one grew, except where she scattered them outside the hills. I am of the opinion that salt is a valuable manure for some kinds of plants. I intend trying it on potatoes more extensively this year. Would it not be as well to put clear salt in the hill?

I have a piece of land that I raised potatoes on last year, that is mellow, on which there was no manure except 200 pounds of plaster per acre. I wish to sow either to wheat or oats and seed down. Would salt be good for either of these crops, and how much per acre?

I take the FARMER, and read it, too, and I have seen but little said about salt as a manure. One of my neighbors that saw the result of my trial, says he shall try it on half an acre.

I have two reasons for not using barn manure. I have but little, and the piece of land is more than a mile off, all the way up hill. G. W. C.

Groton, N. H., 1867.

REMARKS.—We have no doubt but that a small quantity of clear salt in the hill would be useful to potatoes; but it should not come near the seed. We should recommend a handful of plaster to the hill, as far better than salt.

A mixture of salt and lime would be excellent for your wheat crop. It should be thoroughly mingled and sown broadcast in a powdered condition. An English farmer found the salt and lime very beneficial on the potato crop. One or two parts of lime to four or five of salt.

TO PREVENT A COW SUCKING HERSELF.

Please print in your next number of the FARMER the different remedies to prevent a cow from sucking herself, and oblige E. C. ROWELL.

Albany, Vt., March 31, 1867.

REMARKS.—We have used, both for cows and calves, a strip of stout leather—a piece of an old tug, or sole leather—with a row of projecting nails ground sharp, hung by a head-stall around the nose. We have seen a sort of straight jacket put upon the neck to prevent the turning of the head—sometimes a square frame, at others it is made by placing two ox bows on the neck and fastening them about a foot apart, one behind the other, by pieces of wood screwed on. M. C. Johnson, in *Country Gentleman*, says he puts an ordinary leather halter upon the cow's head; slips an iron ring on a surcingle and puts it around the body; then takes a round smooth stick of good timber, an inch and a half in diameter, and drives a staple in one end and ties the staple to the ring in the halter, and puts the other end of the stick between her fore legs, and through the ring in the surcingle. An Ohio correspondent of the same paper says that a hickory rod, some two feet long, nicely tapered to sharp points, and put through the cartilege of the nose in the same manner that rings are inserted, proves effectual. A light board, some eight inches by five, with a suitable notch in one edge, is sometimes hung upon the gristle of the nose.

But we believe that the nose strap, which should be lined on the inside after driving the nails through, will prove the simplest, least objectionable, and as efficient as any other cure for this bad habit, which we regard as a good reason for beefing any animal which indulges it.

USE OF PLASTER.

I wish to inquire through the NEW ENGLAND FARMER, what kind of soil plaster or gypsum is best adapted to, and what are its effects? If it has any permanent fertilizing qualities, or acts simply as a stimulant, that exhausts the soil, making it really poorer for the application?

Has it any value as a top-dressing on old, dry pastures, or grass land of intervales?

Will hops do well on intervales subject to freshet once or twice a year? SUBSCRIBER.

Lunenburg, Vt., 1867.

REMARKS.—Plaster is supposed to act as a direct food for *some* plants—but that it does enrich the soil, acting directly and by virtue of its own ingredients, we do not mean to assert. It must not be relied upon alone. It undoubtedly increases the green portion of plants more than it does the grain, and this adapts it to pastures. On some pastures a dressing of plaster will bring out a luxuriant growth of white clover, where scarcely a plant of that kind had been seen for years. This does not *impoverish* the pasture, but *enriches* it in three ways: 1, by filling the soil with roots which will eventually die there, and form a most valuable fertilizer; 2, it causes the surface to be covered with valuable herbage, about *nine-tenths* of which come from the air; 3, the stock kept on the pasture are fed abundantly, and consequently their droppings will be liberal, and tend greatly to enrich the soil.

Plaster is especially beneficial on the pea, bean, turnip and clover crops, and is appropriate to such lands as will best bring these plants. It acts well on most grass lands, and ought to be sown in damp or rainy weather, when it will adhere to the wet leaves.

We should think the hop would flourish on such lands as you speak of, if the water thoroughly passes off in April.

EXPERIMENTING.

I am exceedingly anxious that more farmers shall try experiments, the coming season, believing that, aside from Divine revelation, experiments are the source of much of our knowledge.

What means *can* be adopted to secure more experiments and a more general knowledge of them and their results? I wish you would give us an editorial upon the subject, and enlist your ablest correspondents in its discussion.

Would a system of *premiums* have a tendency to secure the result? If so, I will be one of 20 to pay a $100 premium to the town, or farmers' club, or lyceum, that secures the greatest number of the most accurate experiments in any agricultural department, the coming season, and especially in the making and use of manure.

Perhaps a more general and common discussion of the subject by the ablest pens, will secure the end. There are probably hundreds of farmers who have experimented with commercial manures the past season, who have not yet made public their experiments—either being afraid others will learn for *nothing* what has cost them money, labor, time and patience, or not having been successful, are afraid of being laughed at; or they "can not write for the papers," or some other equally unjustifiable reason. Are such men doing their duty to themselves or the public? Are we farmers at liberty to live for ourselves? Are we not continually receiving benefits from our neighbors, great good from a powerful government, made more and more powerful by internal improvements, and the increased knowledge and success of its people? And if any one can tell of anything that will tend more to these ends than judicious experiments, not only made but reported to the public, let him not hold his peace. LECTUM.

Vermont, April, 1867.

REMARKS.—The publishers of the NEW ENGLAND FARMER may be counted in for two shares in that premium, on the sole condition that the results be faithfully reported for the benefit of the farming community in general, by their publication in our columns.

SPECIAL MANURES.

I would like to know what manure is best or the most profitable to spread on grass land? Will superphosphate of lime pay? Stable manure, delivered, will cost about fourteen dollars per cord, and I do not think it pays at that price.

ETHELBERT WINSOR.

Smithfield, Greenville, R. I., April 5, 1867.

REMARKS.—Fourteen dollars per cord is a large price for manure. But it costs some of our market gardeners nearly or quite as much, and yet they apply from ten to twelve cords per acre, and find that it is poor policy to scrimp in manure. They use but little superphosphate, and that for special purposes. We must make and *save* all the manure we can from our barn and house—from our stock, muck-beds, slops and waste—no, there must be no such thing or word as waste—every thing must be saved and used. For top-dressing, composts are usually employed. Mr. Davis, of Framingham, Mass., whose farming operations were recently alluded to in the FARMER, finds that loam, of itself, as a top-dressing, increases the growth of grass, but he thinks the additional value of composting pays for the extra labor of putting a large quantity through the cattle yards and hog pens.

WILL PLASTER PAY?

I wish to inquire if it will pay to cart plaster, at nine dollars a ton, five miles to put on potatoes and corn, or sow on grass land? AARON BRIGHAM.

Holliston, Mass., March 30, 1867.

REMARKS.—Sometimes it will, and sometimes it will not; somewhere it will, and somewhere it will not. The operation of plaster is a mystery and a puzzle. We have witnessed most wonderful results from its use in Michigan; while, from its application in Massachusetts, we have looked in vain for proof that it "pays." Some think it operates better in dry seasons than in wet. Suppose you try a little—by which it is sometimes said we find out what a good deal means.

VERMONT WHEAT.

I did not reply to the inquiry of Mr. Parmenter, for the reason that others, and one in this county, Mr. Nutting, better qualified to do so than I am, have done it.

I enclose a specimen of wheat grown by me last season. I do not know any name for it. It is an Iowa variety and will stand up under heavy rains better than any variety I have ever sown.

My crop was 26½ bushels per acre, of 60 pounds by actual weight. It makes over 40 pounds of fine flour per bushel. I write that others may be encouraged to raise wheat in this section where it has been so long abandoned. ROYAL BURNHAM.

South Strafford, Vt., April 9, 1867.

REMARKS.—The berries of the specimen received were so large, plump and handsome, that we showed it to some of our seed-sellers, who were very much pleased with it, and wish to know if you have any to sell.

FROZEN TEATS—COWS FOR THE DAIRY—MANURE FOR CLAY LAND.

Will you or some of the readers of the FARMER, tell me what can be done with a cow that has frozen her teats so that the milk leaks out all the time; is there any help for it, or not?

Which is the best breed of cattle for the dairy, the Ayrshire or Alderney?

Which is the best for clay land,—to put the manure on top of the ground and harrow it in, or plow it in,—for grass? CURTIS WHEELER.

Fairfax, Vt., March 29, 1867.

REMARKS.—Make beef of the cow as fast as possible.

Your question as to what breed of cows is best for the dairy would require a somewhat extended reply to answer it fully. But, briefly, the Ayrshire would be better for a cheese dairy, and the Alderney, or a grade of Alderney, for butter. The cow for a good cheese dairy is not the best cow for a butter dairy. There are different qualities of milk. If Ayrshire cows are used for butter, one good Alderney to every six Ayrshires, would give the butter a decided improvement.

POTATO-RAISING ON LONG ISLAND, N. Y.

Your correspondent, "G. B.," Essex, Vt., asks for information as to the "best method of raising potatoes, preparing the seed," &c. Perhaps the following statement of the process adopted by the farmers in this section, though somewhat different from that usually practiced in New England, may afford him some practical hints.

The land is deeply plowed, and horse manure used, which forces the crop to early maturity, and hence it is less liable to rot. The largest potatoes are selected for seed, and if oblong, are cut in quarters, rejecting the small eyes of the seed end, so called, which produce small potatoes but do not add to the weight of the product, as was demonstrated to me on a potato field. The pieces are dropped 15 to 18 inchs apart, growing no more than three or four stalks together, so that it is rather drills than hills. As to cultivating, it is very little more work, and the chances of growth much greater than overseeding in the hill. From the

large eye, or germ, comes the large potato, and the contrary with the smaller vines. Our farmers scout the "small potato" planting—as they do all small, mean seed, and all small animals. On this Island the potato business is reduced to a science; and a look at the fields in Flatbush and Flatlands, in June, will satisfy one that our farmers understand their business. Perhaps it would not be an exaggeration to say that without advantage as to soil or climate, they raise double the crop to the acre, as compared with the New England States.

H. POOR.

Brooklyn, Long Island, N. Y., April, 1867.

HAULING WOOD AND MUCK—IMPROVING A FARM.

Farmers have been very busy lumbering, and still a great deal of the timber on some farms must remain in the woods where it was prostrated last May by a fierce tornado. Since getting mine out I have hauled a lot of muck, and piled it in a long heap so as to have it ready to remove next summer, as it dries, to a convenient place near my cow stable, where I can use it behind my cattle to absorb the liquid droppings, and thus enlarge the manure heap and consequently increase the fertility of the farm. This I think one of the best and cheapest methods of enriching land, situated as we are, so far from market, where the freight on artificial manures makes them so costly. Ten years ago, I took possession of the farm I now occupy. During that time its productiveness has been increased one hundred per cent. without the use of any other means than those I could gather on the farm, without buying manure of any kind; and yet I see room for more improvement in the same direction. Still, when I plant carrots for the sake of having some to color the winter butter, which I do by feeding them to the cows instead of putting the juice in the cream, if I fail of harvesting nearly twice as many as W. W. Chenery did, I feel that I have not fed my land as well he has his imported cattle. I am practically convinced that it is easier and cheaper to raise ten bushels of carrots on one rod of land than on two, and seventy-five bushels of corn or oats on one acre than on two, and so on through the catalogue.

W. I. SIMONDS.

Roxbury, Vt., March 7, 1867.

SPRING WHEAT.

Please inform me through the columns of the FARMER, what kind of spring wheat I had best sow?

A SUBSCRIBER.

Haverhill, Mass., April, 1867.

REMARKS.—Those who have been sowing spring wheat will please reply. Mr. Wm. Allen, of North Hartland, Vt., prefers the White Flint; Mr. Rufus Nutting, of Randolph, Vt., says the most popular variety in his neighborhood is the Black Sea, and "H.," of Epping, N. H., recommends an "early variety."

"BONE FLOUR."

Having been a wee little journey in the mud, today, I met an old acquaintance who told me that he tried a barrel of the Boston "Bone Flour" that was sent into this vicinity last season, and thought so highly of it that he intends to try some more the coming season.

He said he prepared a piece for corn in the usual way, putting manure in the hill, from the barn, and then in every alternate two rows he put a decent handful of the bone, on top of the manure. When the corn tasselled out, he found by standing on the side of the field towards which the rows run, that the top of the corn presented an undulating or corrugated surface, every other two rows being as much as four inches higher than the intermediate ones. He did not harvest it separately, but thinks the bone did good.

He also sowed four quarts on one rod of run-out grass land; when he hayed the field in which it was, he did not notice any effect, but the aftermath, or rowen, was larger where the bone was, and there a good deal of clover had come in, though there was none in the rest of the field. I believe four quarts to the rod is about 20 bushels, or 6½ barrels to the acre. I am happy to be able to send you the above, believing that the publication of the *results* of experiments is too much neglected.

RUFUS NUTTING.

Randolph, Vt., April 9, 1867.

CULTIVATION OF POTATOES.

I never wrote a line for a newspaper in the world, but as I see by an article in your valuable paper, that a man's sanity would be called in question if he should plant small potatoes, I will give you my way of raising them. Last spring I planted two and a half acres of potatoes on old land that had been up three years, and the soil was dry and sandy. I plowed it three inches deeper than my neighbors do, and then I furrowed it out deep and put in each hill a small shovelful of old manure, or compost, as more than half of it was stuff that I carted into my yard. The rows were three feet and the hills two and a half feet apart. I put two potatoes in a hill, six inches asunder. My seed potatoes were about the size of hens' eggs, and I never use larger ones. As I market my potatoes, I plant very early. As soon as they are up, I run a cultivator through them, and then a double plow, after which a man can hoe an acre a day. In ten days I run the plow through them again, and it is less work to hoe than at first. I save time and get more potatoes by hoeing twice. I change my seed most every year. I think I got about one hundred bushels more by changing seed last year. The result of my crop was seven hundred and forty bushels of good nice potatoes, mostly Oronoes. My farm lays a mile from the foot of Sunapee Mountain.

O. F. CAIN.

Goshen, Sullivan Co., N. H., March, 1867.

GRAFTING WAX.

The directions given in a late FARMER for making grafting wax are precisely the same that I have practiced over 40 years. A few days since I took four pounds of rosin, two pounds of beeswax, and one pound of tallow, and after dividing each into pieces or lumps as small as walnuts, put the whole into a brass kettle—the tallow first—and set it on the stove over a slow fire, and as it melted I stirred all well together. I then poured it into a brass kettle containing two pails of cold water, and as soon as it was cool enough, I greased my hands well with tallow and divided the compound into eight balls. I then formed the balls into rolls twelve inches long, by constantly working and pulling until the mass was pliable and not lumpy, and have a fine specimen of wax. Spread the wax, when grafting, as thin as coarse brown paper on the end of the limb, making it air-tight around the scions.

JOHN KING.

Eagle Bridge, N. Y., April, 1867.

TO PREVENT HENS EATING EGGS.

"A Subscriber" asks in the FARMER of March 30, a remedy "for his hens eating their eggs." If he will give his hens fresh meat twice a week, with a mixture of corn, oats, and buckwheat, and a lump of lime, pounded bone, oyster shells, or like, I think, from experience and observation, he will find the remedy. In the summer season hens usu-

ally roam the orchard and lots, and find insects, worms, &c. In the winter, deprived of their natural variety of food, they often resort to eating their eggs. Supply this variety, and this bad habit will be prevented, and perhaps cured. W. H. W.

South Windsor, Ct., April, 1867.

REMARKS.—"Another Subscriber" in East Randolph, Vt., writes: "Catch the hen, and with a sharp knife cut off the flinty point of the upper bill and the hen will not, or cannot, strike hard enough to break the shell." Rather severe on the biddy!

CULTURE OF HOPS.

I am thinking of setting out a hop yard, and would like to inquire:

1. What is the best kind of hops?
2. What distance ought they to be set between rows and hills?
3. How should they be manured.
4. How should they be poled, with long or short poles? J. F. D.

Bradford, N. H., 1867.

REMARKS.—The hop crop has greatly increased latterly. In 1850 the whole crop of the country was 3,497,029 pounds; and in 1860, 10,991,996 pounds! Next to New York, Vermont raises more hops than any other State, producing 638,677 pounds in 1860.

1. What is the best variety of hops, we do not know. They take their names from a variety of circumstances, such as the hanging of the fruit, the color of the *vine*, that is, the climbing stem. The grape-hop takes its name from the manner in which it hangs, the cluster being close together, like a bunch of grapes. Those named from the vine, are the green, the white and the red. Others are named from places where they have been successfully grown, and some from persons who have raised them from seed. The plant is usually raised from cuttings in the spring.

2. The plants are usually placed in hills, at the distance of five or six feet each way, and should be set as early in the spring as the season will permit.

3. The hop plant loves a rich loam; the whole yard should be manured and the manure well worked in, because the roots extend themselves in every direction, and often quite deep into the soil. No weeds should be allowed to grow, nor the surface to become hard.

In the English practice, the first year's poles are about six feet in length, but twelve feet poles are afterwards used.

FARMS AND FARMING IN WESTMINSTER, VT.

I cannot agree with you, and many others, in your advice to young men about commencing life in farming. Does the merchant get all his capital before he commences business? It is not so with our most successful men. If they can borrow money at six per cent. and let it at ten, it is what they are after. So with farming. I know there are some who are afraid to risk a dollar in anything, and they had better let farming alone and work for others. I know men, young men, who are worth from ten to fifteen thousand dollars, that has all been made within the same number of years, by farming alone, running in debt for all, with the exception of their stock; and that is the way, in my mind, to do. Buy a farm worth not less than ten thousand dollars, if you can get trusted as much. It will require no more to support your family, and but little more to keep your team than on a three thousand dollar farm.

I think the great mass of farmers mow their land too long without plowing. The farmers here, most of them, practice the following rotation: corn, oats, and clover, mowing but one year. The clover fits the ground in good shape for corn. We seldom miss of a good crop of corn after clover. The crops have doubled here within the last ten years, with those who have practiced this method.

Westminster, Vt., March, 1867. H. C.

REMARKS.—This is a plucky view of the case, and a good view, too, where the person who purchases is not "scared at trifles." A large farm can be managed proportionately cheaper than a small one, just as well as other business can. It all depends upon who has it. Advising young and inexperienced farmers to work for wages, is not advising them never to go into debt for a portion of the purchase of a farm.

A PROLIFIC BEAN.

In 1865 I raised from a single white bush bean, 659 in number, besides from 12 to 20 that got out of the pods, and were not counted. In 1866 I planted the 659 beans. The cut-worms took about one-fourth of them, as I judged, and yet from what was left, I gathered 19½ quarts of good nice white small beans; or 60,567 beans; there being 3106 in one quart, from actual count. If over "six hundred fold" is not pretty well for old Massachusetts, I should like to know who has done better.

Bernardston, Mass., Feb. 8, 1867. H. ALLBE.

INDUSTRIOUS HENS.

I have kept through the winter fifteen hens, and from the first day of January to the first day of April they laid 61 dozen eggs. Did the biddies do well and pay their keeping? D. F.

Harrisville, N. H., April 17, 1867.

CARE OF SHEEP AND LAMBS.

On publishing a few remarks of mine on the "Use and misuse of Bucks," in WEEKLY FARMER of Feb. 16, you suggest that by giving my manner of feeding and caring for my sheep and lambs, I might benefit your readers. I will therefore give it as follows:

I take my lambs from the sheep about the first of September. The sheep have the fall months to recruit in. When they come to the barn, and are put upon dry feed, I give them roots,—rutabagas I like best,—at least every other day, at the rate of one bushel to 50 sheep. Changing from green to entirely dry feed induces disease. I give a variety of feed; hay, straw, (poorly threshed) corn fodder, and a little oats, corn, or other grain, in meal. I give them salt and sulphur, using about one pound of sulphur to one bushel of salt, and have no trouble with ticks. About three weeks before lambing I give them cooked food—potatoes or turnips—with meal, mixed; or wet meal without roots, giving it quite wet. This feed will make milk for the lambs when they come.

When the sheep begin to lamb I put two or three in a small pen for a few days, and if the lambs need it, I give them a little cow's new milk until they get smart and strong, when I put them in the yard, leaving the small pen for others. I increase the wet feed after they lamb, and continue it until

they can get a good bite of grass. The great error is in stopping the feed when the sheep begin to leave the barn. They will then refuse hay and their milk will partly dry up; the lambs will get stunted before the grass is good, and they never fully recover from the effects of this neglect. A few dollars' worth of feed and attention at this point will pay ten-fold, besides the satisfaction of seeing thrifty growing lambs and hearty, healthy sheep. I have not lost a sheep by sickness or disease for the last five years.

If this hasty article will be of any benefit to your readers, I shall feel that I am only rendering a slight equivalent for the valuable information I am receiving weekly from your columns.

JONATHAN LAWRENCE.

St. Johnsbury, Vt., March 20, 1867.

FARMING, GOOD ROADS, &C.

Mr. Editor, you wish us to write for the FARMER; but you will not expect all of us to be John Johnstons, or Solon Robinsons. Yet we can write you something—of course we can—although our farms are not like those on the fertile soil of New York, or the more distant West. Certainly a large number of good farmers in this our county of Rockingham, can do this. Most any one of them might write an interesting volume on farming matter.

Farmers of New England have some drawbacks this year, as they are now selling their produce, such as potatoes, pork, meal, &c., at about half of last year's prices; but if they want flour, corn, woolen goods, and many other things, they find no corresponding reduction in prices. And again, high taxes are a thing likely to give the farmer some idea of the value of his country, in dollars and cents.

Good roads are a great advantage to the farmer in marketing his produce, &c. Our village friends might do much to improve the highways leading to their places. We have known such roads nearly impassable; sometimes quite so. Every consideration of interest, of duty and justice demands that our village friends should move in this matter, and see to it that the roads leading to their places be put in good condition, well drained and smoothly graded. If these soft arguments do not stir them up, we shall be under the necessity of trying what virtue there may be in harder ones.

Kensington, N. H., 1867. J. W. B,

ECONOMIZING ANIMAL MATTER.

Were you to travel among the dairy farms of this county you would occasionally find the carcases of the calves that have been killed, lying around the barn, there to remain until they become offensive, when they are removed to some out of the way place and left. Now, around every farmyard there is a quantity of the leavings of hay, straw, corn stalks, &c. Gather all these up and put in a pile, say from one to two feet deep. Here pile these same calf carcasses close together on the top, and when a sufficient number have accumulated, sprinkle well with unslaked lime—say for ten carcasses, one bushel of lime—and then cover lightly with any fine material handy, such as leached ashes, loam or muck, and then throw on top more of your coarse material; if you are to have more carcasses, flatten the top of the pile and put on more, and treat as before. If a sufficient quantity of lime be used, the whole mass will become, before any one not well acquainted with this mode of treatment would be aware of it, a heap of valuable manure, inoffensive to the senses. Where the carcasses are fed to the hogs the head, legs, back bone, &c., are always left. These can be treated in the same way, and instead of becoming a nuisance, as they do when removed to the field as the hogs leave them, prove a source of real profit.

The time occupied in doing this is but little. If the heap be allowed to remain through the summer, other waste flesh and bones may find their way to the pile. When the time comes to compare results between that which is manured with this, and that which is dressed with guano, phosphate, or bone dust, I think the experimenter will say that from the pile pays best, in proportion to cost.

Richmond, Vt., April 9, 1867. HENRIB.

LICE ON CATTLE.

Will the editor please inform us, through the FARMER, of a way to keep lice off of cattle, or kill them when they have got on them? F. G. G.

Sharon, April 6, 1867.

REMARKS.—Use the tobacco wash which is advertised in the FARMER, or the mercurial ointment. Both must be used with care. For some days after they are applied, the cattle should not be exposed to cold or wet. A little ashes rubbed in among the hair, or even dry garden loam, will disturb and lessen the vermin.

TO DESTROY TICKS ON SHEEP.

Will you, through the FARMER, give your readers the best cure for sheep that are troubled with ticks? G. C.

Orange, April 8, 1867.

REMARKS.—Dip them in the tobacco wash mentioned in another article in this paper. Or use mercurial ointment.

AGRICULTURAL ITEMS.

—In Philadelphia, peach and apricots trees were in full blossom on the 12th of April.

—The six woolen mills in Oregon last year worked up more than 1,000,000 lbs. of wool.

—It is probable that the coming wheat crop will be the largest ever grown on this continent.

—Mr. E. T. Miles, of Fitchburg, Mass., is the owner of a calf one year old that weighs 720 lbs.

—Three villages in Maine have this spring purchased from one nursery firm in that State three thousand dollars worth of trees.

—If a stable is kept clean, cows will go into it of their own accord. If dirty, they have to be driven in.

—There has been a cheese factory company formed in Brookfield, Vt., to operate with 250 cows, and another in Williamstown with 400 cows.

—Officers of the West Somerset, Me., Agricultural Society were elected March 2. S. W. Hapgood, President; A. W. Moon, Secretary and Treasurer. Fair to be held Oct. 16 and 17.

—The London *Agricultural Gazette*, says that in fifteen counties 11 persons have been imprisoned and 2134 fined for violations of laws and orders for the suppression of the cattle plague.

—It is estimated that there are thirty-two and one-half millions of sheep in the loyal twenty States and two Territories. It is supposed that the

annual number of lambs will be over twenty-four millions.

—Soaking cows' teats for a few minutes in a very strong decoction of white oak bark; also rubber rings that fit tight enough to stay on, are recommended by the New York Rural to prevent cows leaking their milk.

—The Maine *Farmer* says that Warren Percival, Esq., of Vassalboro', who has the best herd of pure Durhams in the State, gives special prominence to the development of the dairy qualities of this favorite breed.

—A correspondent of the *Mirror and Farmer*, has heard that chewing the centre seed-stalk of common plantain will effectually cure the hankering for tobacco, in those who wish to abandon the miserable habit of chewing.

—A correspondent of the *Country Gentleman* recommends boring an inch or half inch hole, say six inches deep, in the end of posts to be set in the ground and fill it with crude petroleum, and when the wood has absorbed one filling, to fill again and plug it up, when the post may be set in the ground.

—The *Tribune* reporter of the New York Farmers' Club, says that abortion in cows is confined to dairy sections where the calf sucks little or none, being killed or disposed of nearly as soon as born, and asks, Does not nature indignantly refuse to be a party in a transaction which cruelly disregards her instincts and longings?

—A correspondent of the *Country Gentleman*, in Champaign Co., Ill., says that the cattle, the lands and wealth generally of Central Illinois, are fast being gathered into the hands of a few rich men. The Alexanders, who bought Mr. Sullivant's farm of 23,000 acres, now own some 1600 head of fat cattle, and are buying up every "bunch" to be had of the smaller farmers.

—"Ramie" is a new Southern staple from Java. It will grow in the southern half of Georgia, will yield five crops a year of 800 pounds each; twenty-four hours after being cut it is laid out in long bands of pure white floss, ready to spin. It is planted like sugar cane; once planted, always is planted, grows twenty feet high, sells for twice the price of cotton, and is stronger and finer.

—Merchants find it necessary to employ travelling agents to solicit business. The Connecticut Board of Agriculture lately resolved, "That we recommend to the Agricultural Societies the practice of securing contributions of stock and manufactures by personal solicitations of breeders and manufacturers, and devoting some time previous to the days of the Fair to this object."

—Mr. J. Clay, of Buxton, Me., who recently visited the West, makes the following estimate for the Maine *Farmer* of the cost of a prairie farm. One hundred and sixty acres will cost at $5, the lowest estimate, $800. To fence this with posts and boards (and it must be fenced to save the crops) will cost $1 per rod, making for fencing $640. Then it will cost as much or more, to build a house and barn there as here, say $1500—making the whole cost $2940, before a single furrow of the tough sod is turned.

—Some six years ago, a correspondent of the *Maine Farmer* had one buck of coarse wool, and one of fine. The fine wool sheared 3¾ lbs., long wool 7 lbs. unwashed. Since that I have made another trial of fleeces, both washed, with this result: fine, 4¾ lbs.; long wool 5 lbs. The long wool was nice and clean, the fine wool I could not get clean. It cost me two dollars more to keep the fine wool buck, while the fine wool lambs were not worth as much as the others by about one dollar a head.

—A gentleman in Montreal whose interest in agriculture induced him to purchase a farm on one of the islands of the St. Lawrence, after three years experience, arrives at the following conclusion, as stated in a letter to the *Canada Farmer*,—a conclusion which has been forced on many other amateur farmers. He says, "I am well aware that to make a good farmer requires an amount of knowledge and application which people who have given the subject no attention little dream of. The profession of a farmer ought to rank higher in public estimation than it does; for surely the prosperity of our country is bound up with it."

—Mr. McCombie, an experienced grazier and feeder, near Edinburgh, says, any one who turns cattle out to grass that have been fed through the winter upon cake, corn, brewers' wash, grains, or potatoes, and kept in hot stables or close straw-yards, will be miserably disappointed in any expectation of profit. The mode of feeding has been unnatural, and before the animal begins to improve three months will have passed. A few weeks feeding of cake or corn may not absolutely ruin a beast for grazing; but the less artificial food they get during the winter, if afterwards to be grazed, the better; and when kept upon the food above specified for several months, they are perfectly unfit for grazing.

For the New England Farmer.

ROTATION OF CROPS.

A discussion by the Irasburg, Vt., Farmers' Club, March 25, 1867, reported by the Secretary, Z. E. Jameson, Esq.

The President remarked upon the importance of the subject. Z. E. Jameson said that when he commenced farming, he plowed up a piece of pasture land and put on, first, a crop of oats; second, a crop of oats, and third a crop of oats; each crop without manure, yielding forty bushels per acre. With the third crop, sowed grass seed. The fourth crop was sorrel, and then sorrel with weeds and poor grass until the ground was plowed again. This land has been occupied by hoed crops [How long?] and is to be seeded to grass this

year, with a better prospect of a good yield. Grass is our principal crop, therefore when it fails, plow, apply manure, and plant. The second year seed to grass with grain. Keep the ground up only two years, if it is land that can be hoed; if not, sow grain two years and seed with the second crop. Wm. Jameson plowed up a piece [How large?] of unproductive land and spread manure that cost $1.50. He had two crops of grain and has cut grass six years since. Grass is our best crop. With it we can keep stock, with stock make manure, and with manure we get good crops again. He plowed four acres, harrowed it and sowed oats and grass seed. Grass grew four feet high, and has continued to produce a good yield. Three years ago he plowed a third of an acre. Raised barley, potatoes and turnips. Second year he had twenty bushels of barley, and this year he got six loads, which he was quite sure was full two tons of dry hay; some of it reached to his forehead, over five feet high. He don't believe it pays to raise a lot of oats to sell, but feeds grain to stock. His farm is only sixty acres, and when he built an addition to his barns, his neighbors asked why he did so. He told them to fill with hay. His barns are now crowded. Still he intends to double the present yield. If his land was suitable, he would cultivate it all in rotation, but as some of it is wet and rather clayey, he top-dresses and keeps it in grass, and hoes the dryer portions.

Mr. Church said grass is the chief object, and we only plow to fit the land for the better production of this crop. If land is easily worked, and the sod readily decomposed, would only plow two years; first hoed crops, second oats. Apply the manure the first year before plowing. If the ground is heavy with a very firm sod, keep it up three years. First crop oats; second, corn or potatoes; third, oats and seed to grass. Mr. Webster said where the grass gets poor, he first plows and sows to oats; the second year plants and hoes; third year sows wheat, and stocks down with eight quarts herds grass, and six pounds clover per acre; and gets a good quality of hay and no sorrel. Applies manure to the hoed crops.

Mr. Tenney said our system of culture must vary according to the soil. We get money by selling beef, wool and butter, and to produce these our main reliance is hay. He commenced farming in 1840, and had had twenty-six year's experience. His course had been to take the poorest soil and break up in the spring,—never in the fall,—turning in the manure. Plants and cultivates well. Does not plow in the fall, for that would expose the manure to sun, wind and weather. Plows in the spring and sows with grain and grass seed. The hardest land to keep fertile is that which is sandy. It bears our heaviest timber. When that is removed, it yields bountiful crops, but is soon exhausted, and requires very liberal manuring. He was set against potatoes, and would as soon sell hay as potatoes. He was also opposed to the use of plaster (gypsum). It draws the fertility from the soil; makes a good crop, and leaves it more barren. He knew a piece of land about one mile from Montpelier, Vt., which produced very poor hay, that was heavily dressed with plaster five years. The first year there was a good crop; the second year a monstrous one—it could hardly be dried on the ground; third year, not quite as good; fourth year still less, and the fifth year hardly enough to wipe a scythe. This was some sixteen years ago. Since that time there have been liberal applications of manure, but it has not been brought back to its original fertility. Manure should be applied with a view to benefiting the crop and improving the land. Would stock down the second year. We should so manage as to raise two or three tons per acre of hay.

E. B. Hill remarked that he had tilled light soil and got the best result by applying manure near the surface. He once plowed in the manure on a piece and planted potatoes, but received no benefit whatever.

Mr. Clough would keep up moist land three years: first, oats; second, corn and potatoes; third, wheat. On half of one field spread the manure and plowed it in; on the other half he spread it on the furrows after plowing. All the crops were better during the whole rotation where the manure was put on top.

A. A. Webster practiced a rotation like that described by Mr. Clough.

For the New England Farmer.

FENCES.

A great deal has been written upon this subject, and many experiments have been made to test the utility of various materials for the purpose of enclosure. The amount of capital invested in fences is enormous, and he who will invent anything permanent, will be a public benefactor.

In this section of the country, rails are almost universally used for farm fences. White cedar is employed whenever it can be procured; but it is becoming scarce. Good cedar rails sell for $70 or $80 a thousand. Some farmers have enough to replenish their fences, but many who once had enough have sold nearly or quite all their timber.

Next to cedar, black ash is extensively used. This makes a good substitute, but it is not so durable. Rails were also formerly made of pine, but as the country became older, pine lumber increased in value, and was required for other purposes.

The great expense of keeping fences in repair has caused farmers to experiment upon a variety of trees and shrubs to supply the place of rails or other timber. Thorn, cedar, arbor vitæ, osage orange, and white willow, have all been tried, and each has found its admirers. I think if thorn is properly trimmed it will

make a good hedge, but it requires careful attention several years to make a fence that will be safe against cattle, and I should not be willing to risk it to protect a field against hogs.

Arbor Vitæ makes an excellent wind-break, and should be set at the north and west of barnyards and orchards, and when properly trimmed it makes a fine front fence, though it needs some light material to protect it for several years. Wire will answer.

I have had no experience with osage orange, but, judging from all reports, I believe it will not prove hardy enough for our Northern climate.

I now come to the white willow. In the *American Agriculturist* for 1863, No. 12, a long article appeared written by one of the Editors, extolling the willow in high terms for fencing. That paper being considered by many as reliable authority, the article was carefully read, and favorably received.

The next spring and summer an agent of E. S. Pike, of Painesville, Ohio, canvassed this county thoroughly, producing samples of *wonderful growth*, glowing handbills with cuts representing beautiful hedges, and recommendations from agricultural and other papers, and from distinguished men not a few, in favor of the white willow for farm fences. The thing took readily. Miles and miles of the cuttings were subscribed for. Farmers who can scarcely tolerate anything from *Yankeedom*, subscribed freely.

In the spring of 1865, the precious cuttings came. The rush to secure the game was great. The cuttings were tied up in bundles, a few of good size in each, but a large proportion of small twigs. Some misgivings were apparent in the countenances of purchasers, as one by one the precious bundles were taken away; each having the consolation of knowing that he was not alone, and that if he had actually bought willow twigs cut in our own swamps, there was little danger of being laughed at.

Thousands of dollars in gold or its equivalent, were taken from Prince Edwards county; and in other sections of Canada and of the United States large sums were paid for that which was expected to make a cheap and durable fence.

Before one season had passed, the scales began to fall, and now, after two summers, a clear vision discerns only a few *slender withes*, where a rank growth was anticipated. Two men, within my knowledge, have succeeded, by extra care and manuring, in producing a fair growth of willows; and there may be a few other exceptions to the general rule.

Such is the state of the white willow "hedges" at the present time, in this part of the country. Barnum has been styled, "The Prince of Humbugs," but the title no longer belongs to him, for the willow swindle is far ahead of any of his sharp practices.

L. VARNEY.

Bloomfield, C. W., Dec. 1, 1866.

For the New England Farmer.

BUTTER MAKING.

In connection with the ability to make good bread, one of the most valuable attainments, if not accomplishments, which any woman can possess, especially a farmer's wife, is the skill or knowledge how to make good butter. This is not an art that comes of itself. It is fully attained only by study and practice. But with the best skill and judgment, the first essential requisite is a good cow or cows; for, other things being equal, all cows will not make equally good butter. Having these, the next thing is their food; for it is certain that poor, sour swamp grass or hay will not make as rich milk and cream as sweet clover, timothy or red-top. And yet good cows and good feed are not all. To make good butter, there must be a good place to keep the milk and cream. This is a matter too much neglected or overlooked by many farmers; and it is to this fact, I apprehend, that is to be attributed much of the poor and ordinary butter found on many tables, and also in the market.

Go into our farm houses all over New England, and what, in too many cases, are the arrangements and conveniences for conducting this most delicate and important business? Too often the milk-room or pantry is very near the kitchen or leads out of it, so that all the disagreeable odors that escape from the various culinary processes which daily are carried on there are more or less absorbed by the milk and cream. And not only this, but frequently into the pantry, with the milk, are put, for future use, boiled cabbage and turnip, and onions, raw and cooked, codfish and halibut,—in fact, almost everything that has an agreeable as well as disagreeable odor. Besides, in too many instances, the filthy habit of smoking is indulged in by the male members of the household, and sometimes by the female also, so that the house from cellar to garret is more or less impregnated with this most nauseating perfume.

With such arrangements as these, it is utterly impossible for any one, with the best care and efforts, to make butter of the first quality. Even with the utmost attention, only an ordinary article can be produced. And it is no wonder to me that there is such a large amount of poor and second rate butter found in all our markets. It may seem sweet at first; but the fatal taint is there, and will make itself known long before it reaches its consumer. Hence it is no wonder that those who wish to obtain a nice article of butter are willing to pay the almost fabulous prices which we occasionally hear of being paid for a really nice and reliable article in the city market. To make the best of butter, there must be a room appropriated solely to this purpose, into which nothing that is offensive or unclean should ever be allowed to enter. Then, when all the other conditions are complied with, I

see no reason why a choice article of butter may not be made. And it is not only a matter of taste, but of pecuniary interest to every farmer to make the very best butter, for he will always find a ready and remunerating market for it.

Tyngsboro', Mass., Jan. 30, 1867.

For the New England Farmer.

TREES MOST FIT FOR PLANTING,

TO TAKE THE PLACE OF THE LOST FORESTS.

The most valuable tree, all things considered, for this and almost every other purpose, is the rock maple. It is native to our climate; it is easily found and safely transplanted. It is a clean and graceful shade tree, very beautiful at all periods of its life; it is greatly and deservedly prized for the delicious syrup and sugar made from its juice; and it is of the highest value for its wood, as a material for the arts and for fuel.

This is the best season for transplanting it. On the edges, and in the openings of all the maple forests, vast numbers of the young plants may be found. Those of a size and shape suitable for planting where they are to remain, may not so easily be found; but a few can be found. For this purpose, small trees, not over twelve feet high, should be selected, and those are much to be preferred which are found growing on the outskirts of the wood, where they shall have been, for some years, freely exposed to the sun and wind.

A person looking forward to extensive plantations, and taking into view the wants of his friends and neighbors, will do well to remove a very large number of plants, two or three years old, to nursery rows, where they may gradually become hardened to abundant light and air. Many of the young trees in the nursery may die; and, of those which survive, only the most sightly and promising should be chosen for permanent planting. The best soil for the maple is a moist soil, with a clayey bottom, or one in which clay is a considerable ingredient. But it will grow on any soil.

Let any one who wants to see what a beautiful thing a young rock maple is, from earliest youth to the beginning of maturity, go out of Boston over the Western Avenue, any time from May to November, take the road to Brookline, and, on it, the first turn to the right, through Appleton Place, and, across the bridge, through Longwood to St. John's Church. He will need no words to recommend it. Any one who wants to see what a magnificent shade tree it becomes in its maturity, may drive from Bolton, over the hill, by what was formerly Sampson Wilder's, afterwards Stephen Higginton's, —now Mr. Forbush's—to the Old Common in Lancaster. On the hill, he will see a row a mile long of these grand old rock maples. While young, it is a singularly attractive, delicate, shapely tree. As it grows older, it shoots up and expands nobly and loftily. In its maturity, its broad arms extend horizontally, filling and satisfying the eye, and giving great depth of shade. At every age, the large, broad, full, rich leaf is very beautiful at all seasons, and, in autumn, its boundless varieties of the richest colors, all the yellows and all the reds, render it for many weeks the most resplendent ornament of the forests. No flower garden can vie with it.

Consider what a substitute a row of these trees along a farmer's field or a great highway, would be for trees that have been ruthlessly or carelessly or ignorantly destroyed. What a magnificent sight, from the centre of the village, will be a grove, say rather an orchard, of sugar maples, growing on the lower slope of a hill—a situation in which it is always likely to thrive.

For several years past maple sugar has been, in Boston market, more valuable than Havana or New Orleans,—for syrup it is vastly superior. An economical husbandman may soon substitute it for every variety of imported sugar, and gain by the substitution. All the stages of the preparation take place at a season of comparative leisure, when there is little else to be done on the farm.

Every one who is desirous that his great grandchildren shall, in their old age, enjoy the luxury of a wood fire,—and it is far the greatest luxury for the outer man, and not for the outer man alone, that is left,—must plant some acres with maples. No wood, except hickory, makes a pleasanter fire than old rock maple. But those grandchildren must be very rich or they will be unwilling to afford themselves any thing but the smaller limbs and the spray for fuel. The trunk and the larger branches and the root will be altogether too precious. As curled maple, shaded mable, landscape, clouded, and bird's-eye maple, there is no native wood which furnishes so fine a material for tables, chairs, bedsteads, wardrobes, bookcases, picture-frames, and almost every other kind of furniture; and few are so valuable for lasts, and a great variety of wooden ware.

Several other native maples are handsome and valuable trees. The white or red maple, remarkable for the silver color of the under surface of the finely cut leaves, is a rapid grower and a broad-headed, magnificent tree. The red maple nearly resembling the rock in the character of its wood, is well known for its fine autumn-colors, everywhere in New England. The Moose Wood is a graceful little tree, and the Mountain Maple is a pretty shrub. The Norway maple, a hardy species from the north of Europe, stands the sea breeze and the coldest winter better than any other tree of the family. It is admirably well suited to be planted in exposed situations along the New England coast. The Great Maple of Europe, commonly called Sycamore in England, is a noble tree, and grows to a great height, often reaching one hundred feet. It is hardy in this climate, and grows very rapidly. The Field

Maple of England, the common maple of the continent of Europe, is a smaller tree and probably less hardy, as it is not a native of the northern part of Great Britain. G. B. E.

Boston, April, 1867.

For the New England Farmer.

IMPROVEMENT OF STOCK.

Although for the last twenty years the improvement in all the departments of Agriculture has been rapid and persistent, yet no one thing to my mind has kept pace with the improvement which is especially observable here in New England, in all kinds of farm stock. Twenty years ago, the Alderney breed of cows which is adding so much to the wealth of the dairy interests of the country was, in this section, at least, unknown, and our Durhams and Devons were anything but generally disseminated. At that time, too, I can well remember that the report of a ten or eleven pound fleece of wool from a mature Merino buck was received with very grave doubts as to its truth, and we are sometimes disposed to smile at our early unbelief when we now see fleeces of from twenty to twenty-five pounds in weight quite common among a similar class of sheep. Although a large per cent. of this extra weight is produced by the greater length and thickness of the fleece and by the more complete covering of every part of the body, yet something must be attributed to the extra care and shelter from storms, now given. A recent examination of the flock of Eben Bridge, Esq., of Pomfret, Vt., who has been for many years one of the leading breeders of Merino sheep in Windson County, has abundantly satisfied me of the rapid improvement which the past few years has witnessed in this invaluable breed of sheep. Mr. Bridge has in his possession two of the best sire animals in the country, as their stock amply proves; and, I should judge, about one hundred and fifty ewes, which for compactness of fleece upon every part of the body, for robust constitutions and symmetry of form are very seldom equalled. At this day, the great point to be kept steadily in view by Merino sheep breeders is to increase the amount of pure wool in their flocks, and the time is not far distant when the flock which will cleanse the most wool per head, other things being equal, will take the front rank among the Merino sheep of the country. E. R. S.

Cornish, N. H., Feb. 18, 1867.

GRAPES IN MIDDLESEX CO., MASS.

From various reports and statements published in the lately issued "Transactions of the Middlesex, Mass., Agricultural Society," we glean a few facts in relation to the cultivation of Grapes.

In this county which is entitled to the credit of originating the Concord grape, it is estimated that more than fifty acres are devoted to grape culture.

SOIL.—The Committee on Vineyards say, cheap lands, not worth more than twenty dollars an acre, will answer every purpose of a vineyard. Redding, a great authority on wines, says that good, rich soil never produces even tolerable wines. It will be seen from one of the Concord statements, that one-half acre of waste pasture land, after being turned into a vineyard, was made to yield, from 356 vines, 3592 pounds of grapes, sufficient to bring the sum of $1,243.20. Two thousand cuttings are also raised at twelve cents apiece, making $240 additional. Total, $1,483.20, from half an acre of land.

In the statement of Thomas S. Hunt, the ground was cleared of brush, wood, and stone, and plowed ten inches deep; stable manure composted with swamp muck, at the rate of thirty cart loads to the acre, spread and covered with the harrow, and potatoes planted. The following spring manure as before. The ground is now ready for the vines, which are set in rows running east and west, eight feet apart and seven feet in the rows. The variety planted is the Concord.

MANURES.—After the vines are set, the committee say that ashes of wood, leached or unleached, are a powerful manure for the vine, and probably contain all that it requires. Mr. Derby of Lincoln used green manure from the hog pen. His berries, were large and juicy, and looked better for the market when freshly gathered than the others submitted for inspection. But in one week after they were received by the chairman of your committee, they began to shrink up and to taste insipid, and to-day, (Dec. 20) they have all fallen from the stem and shrunk up, nothing but their skins remaining. A box of the same kind of grapes (Concord), which were received at the same time from Mr. John B. Moore, of Concord, who used unleached ashes to fertilize his vines, still remain on their stems, and are plump. Their flavor is still good, although it has lost some of its sprightliness. In the opinion of the chairman of your committee, the difference in favor of the last mentioned grapes is attributed to the use of wood ashes for manure, instead of a gross, rich compost.

PLANTING AND PRUNING.—Mr. Hunt, of Concord, says, throw out the soil as deep as planted, and in circumference from three to six feet, according to size of plant, and with pick or bar loosen the subsoil ten inches deep; I now throw back a part of the soil, crowning it a little in the centre; upon this spread the roots evenly, covering them with the best soil. Some vineyardists of reputed experience recommend deep trenching and high manuring. They should also add a long purse well filled. For open culture in our vineyards, whether of large or small extent, it will not pay.

My method of training in the vineyard is

upon stakes, two to each vine. For the first two years (if one year old plants) I usually plant a single row of cuttings, turnips, carrots or beans; turn a furrow midway of the rows; into this I put fine compost; the ground is frequently stirred and the weeds kept down, the crop paying the expense of cultivation. For the third year the fruit will pay it.

RIGHT TIME TO CUT GRASS.—As there seems to be some question as to the proper time to cut grass for hay, I will give my opinion. Cut early, that is, as soon as the herds-grass begins to blossom. I find by my records, I commenced cutting my grass the 16th of June in 1862, in 1863 the 15th of June—in 1864, the 14th—in 1865 the 14th of June—in 1866 the 25th of June. And now for the quality of the hay. I feed it to my milch cows, without any other feed; they would give milk until they calved, did I not dry them off. I dried off two cows the middle of January—one gave two quarts of milk, the other three, per day. They are to calve the 7th and 8th of February. I have milked the same cows until they calved, but think it injured them.

I feed my working oxen and fat cattle on the same kind of hay, and find it far superior to late cut hay. You get nearly as much weight as you would if you cut your grass later—that is, the first crop—if you cut the aftermath you will get one-third more. There is another advantage. A barn will hold from one-quarter to one-third more in weight—the cost of cutting the same, of making double, and the carting into the barn the same.—*Asa Hubbard, Middleton, Ct., in Co. Gentleman.*

NEW PUBLICATIONS.

BEET ROOT SUGAR and Cultivation of the Beet. By E. B. Grant. Boston: Lee and Shepard. 1867. 158 pages. Price $1.25, bound.

We believe that American farmers can and should produce the wool used by our manufacturers; and we also believe that it is possible for us to raise our own sugar. The object of this little work is to demonstrate the advantage and feasibility of producing beet-sugar in this country. After a general history of the business in Europe, with observations upon the relative advantages of the Old and New World for its production, the author gives instruction for the choice of soil suitable for the cultivation of beets; the methods of preservation; of raising the seed; and of the preservation and use of the pulp. To collect the information embodied in this volume, the author visited the principal establishments in France and Germany, as well as the prairies of the West; and yet the publishers place the book in our hands without an index—an omission that seriously detracts from the value of this timely manual.

—It is said that 400 steam cultivators are at work in England, displacing 2500 horses.

CULTIVATION OF HOPS.

Our last article closed by directing that a covering of two good forkfuls of manure be put upon each hill in the autumn of the first season. Early in the spring of the second year, and every year thereafter, this manure should be removed, with the dirt from the main root, and all side shoots or surface runners, also the crown or top, trimmed off, as directed by Mr. Hansen in the article published in the Monthly FARMER for April, p. 176. The following illustrations show the whole process.

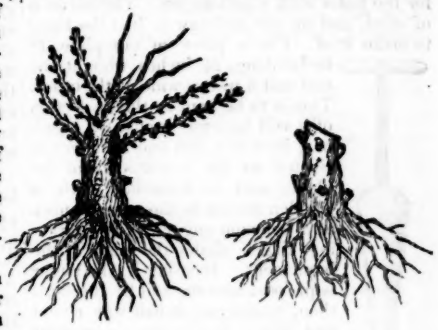


FIG. 4. *Plant Untrimmed.* FIG. 5. *Plant Trimmed.*

Figure 4 represents the plant before trimming, and figure 5, the plant after having been trimmed. Mr. Hansen says these trimmings, or sets, if not needed for immediate planting or sale, may be buried a foot deep, kept clean during the summer, and used the next spring. This is called "grubbing," technically; and it is well to make it so literally, by destroying all the grubs that may be seen about the hills. There are two kinds of grub—one which makes a beetle, with a dark, hard head, and white body, with legs all on the fore part of the body. It is always found doubled up like a horse-shoe. The other is a caterpillar, which makes a butterfly. Both must be killed wherever found. After covering the root-stalk with fresh earth, the poles should be immediately set. The earth is less compact immediately after the frost leaves the ground than when it is thoroughly settled.

We must assume that the necessary poles were procured and prepared during the previous winter. Red cedar, tamarac, hemlock, spruce, pine, chestnut, ash, and almost any kind of wood will answer. In his contribution to Mr. Judd's Hop Culture, Mr. Ryder, Coventry, Ct., says, "get them of as uniform

size as possible, about sixteen feet in length, and from two to three inches in diameter. Sharpen the larger end, for a distance of about twelve inches, leaving a blunt point full one inch thick." Instead of using an iron bar to form the holes for the poles, Mr. Amos Turner, of Peru, Me., uses an implement, of which we copy the following cut and description from the same work.

Turner's Pod-auger for making Holes for Hop Poles.

Instead of using a crowbar, we make holes for the poles with a pod-auger. The blade is of steel, and an old mill-saw is just the thing to make it of. Cut a piece of saw-plate 18 inches long, 2½ inches wide at one end and 6 inches wide at the other. This is to be bent so that a section of it will be semi-circular. A shank of ¾ inch iron and one foot long is riveted to the larger end of the blade, and is furnished with a wooden handle in the same manner as a common auger. The engraving, Fig. 6, shows the shape of the implement. In using it, the auger is pressed into the soil by the foot, then, by turning it half-way round and lifting it, the dirt is brought out, and a hole made to receive the pole, with one-half the labor of using a crowbar.

FIG. 6.

The strongest and best poles should be placed in the outside rows, where they will be exposed to the force of the wind, and thus serve to protect weaker and smaller ones.

The poles should all be set by the time the vines are three inches in height. By setting the poles early, many vines will run up of themselves which otherwise would not, and thus save much time in tying. The poles should be about four feet apart at the top, as this distance prevents the vines from running together, and gives the sun a chance to strike all parts. When the vines are about three feet in length, commence to tie them. There will probably be from twenty-five to thirty vines in the hill, but only two must be saved for each pole. The surplus vines may be cut off, or twisted into a mass and placed upon the hill with a stone or clod upon them. In selecting the two vines for the pole do not take the largest nor the smallest, but those of medium size. In very rich ground it may be well to leave a couple of vines on the ground for future use, in case you should want them. In selecting the vines, take those that are nearest the centre of the hill or inside of the poles, for in cultivating there is then less danger of injuring them. Be very careful in handling and tying the vines, for they are easily broken. Various kinds of strings are used, but with any kind care must be used not to have them too tight. Mr. Jameson, of Irasburg, Vt., cuts the foot from an old stocking and placing the leg over the left wrist, unravels as needed. This is elastic and will give as the vine grows. Tie them just below the second bud, carrying them around the pole from left to right, or with the sun. As soon as the vines grow three or four feet beyond the place where they were tied, go to each vine and cut off all trailing arms to the height of five feet; then commence to cultivate the yard. With a hoe remove all weeds from the hills, loosening the dirt, as is customary in the hoeing of corn. Do not hill up, however, if you would save your vines from the effects of the grubs, which, through carelessness, often destroy whole yards. After this hoeing, apply slaked lime or good wood ashes, sprinkling it with the hand in sufficient quantity to whiten the ground around each hill. Examine the earth around the roots of the vines, and kill any grubs that may be discovered. It pays well to search thoroughly for these pests.

About the first week in July, when the grubs have finished work for the year, hoe and "hill up" the vines. After this, the yard will require but little attention. The hops will be in full bloom about the last of July or first of August; and as from this time the hops increase in size and the poles get more heavily laden, they require more or less attention, especially after a hard rain or heavy winds. Many poles will be blown over or broken, and it is necessary to set them again. If they are allowed to remain on the ground, the hops will mould, and, after a time, spoil. The vines should be unwound from the end of the broken pole, which should be sharpened and set again as before.

Directions, with illustrations, for picking and drying will be given next month.

SAMPLES OF FOREIGN WOOL.

Immediately upon the passage of the late wool tariff, a report was put in circulation that the law was to remain inoperative until an agent could be sent to all the foreign wool producing countries to collect specimens for the use of our custom house officials. It appears, however, from a letter from Mr. McCulloch, to Dr. Randall, that instead of contemplating such delay, instructions were issued immediately upon the passage of the Act, to the Collectors of customs at the several ports into which wool is imported, to classify and assess duty according to said Act, to the best of their power, in the absence of samples, and in no case to finally liquidate an entry, but hold them all in abeyance, until the samples could be procured. Hence in all cases the duty has

been assessed on all importations of wool since the Act went into effect, under its provisions. The Secretary also says that it is believed that the samples, arranged by Mr. Bond, and now awaiting the examination of the representatives of the National Associations of Wool Growers and Wool Manufacturers, represent all, or nearly all, the various descriptions of wool usually imported, and hence he does not deem it necessary to send an agent abroad at all, or certainly not until he sees some necessity for so doing.

Mr. Bond has prepared specimens of seventy different grades or classes of wool, which it would seem might enable the department to classify any new variety that is not expressly represented by either of these specimens. Twelve setts of these specimens have been prepared; one of which is in Washington, the others are still in Mr. Bond's office in Boston. We have examined them with much interest. Each specimen is put into a glass tube or jar, 3½ inches in diameter and some 13 inches long, which is plainly numbered and marked at each end. For convenience of reference and safety of preservation, Mr. Bond has devised a case of pigeon-holes, in which these specimens are deposited and arranged according to the class and grade to which they belong. The whole forms a museum of foreign wool which must be interesting to all who grow or manufacture this important staple.

We notice by the *Rural New Yorker* that Dr. Randall proposes that the case of samples now at Washington be sent to New York for the purpose of enabling the committee of the Wool Growers and Manufacturers who are to examine them to avail themselves of the facilities for investigation and comparison to be found there. As the duplicate cases are all here, we should have supposed that Boston instead of New York would have been selected by the committee for their place of meeting.

A GARDEN OF ACCLIMATION.

In the annual report of 1865, the Commissioner suggested that the government establish a garden of acclimation, where animals, as well as plants, could be acclimated and then distributed over the country.

A Little Valley, N. Y., correspondent highly approves of this suggestion, and states that he has for fifteen years been engaged in domesticating some of our native wild animals. He commenced with one of the noblest of our forest animals, the *Elk*, and the result has been a success, having bred and raised *forty* elk on his farm! He has also bred the *mink*. He "found that it required some experience or skill to manage the wild ones taken from the woods until they reared their first young; but with the second generation the difficulties were overcome, and it proves comparatively easy to raise them in large numbers.

This is exceedingly interesting. The races of beautiful and valuable animals that were once plenty among us ought not to be allowed to pass entirely away. Perhaps all of them might be made to prove profitable in a pecuniary point of view, as well as interesting.

The "*Notes of the Weather*," from nearly all parts of our country, show that the month of January, 1867, was the coldest, most boisterous, and with the heaviest fall of snow, of any month of January since that of 1857.

For the New England Farmer.

THE GARDEN.

A few hints to remind the readers of the FARMER of the appropriate garden work of the season may not be amiss. Little is gained in being in a hurry in planting in the open air, as there are but few kinds of vegetables which are not sensitive to the frosts and cold that may be expected the fore part of May in New England. Still there are a few hardy plants, the seeds of which may be sown regardless of light frosts. Taking up our subjects alphabetically, we begin with

Asparagus.—Dig in a dressing of manure, if not already done, and the shoots are not started; if so, a dressing of superphosphate of lime, lightly raked in is best. Clear off all rubbish. May will give you a fine supply. Cut 3 to 4 inches below the surface with a long, narrow knife, using care not to injure other shoots.

Beans.—If poles are not on hand, prepare them now. Nothing is gained by planting till settled warm weather. If you feel anxious to have a few early, start them on sods in a hot bed, or under glass. When the weather is settled, and ground warm, plant all varieties, reserving the Limas to the last, as they are the most tender.

Beets.—These will bear earlier planting. Sow in drills one foot apart, using plenty of seed, and thin them out for greens. The Early Bassino, for summer, and Long Blood, for winter, are good varieties.

Cabbage.—Seed may be sown in the open ground any time after it is warm. Plants started in the hot-bed should be transplanted

to the cold frame and from there into the open ground after frosts are past.

Carrots may be sowed in well prepared soil in drills one foot apart; the seed mixed with fine dry soil will be easier sown and more even. Early Horn and Long Orange are best.

Celery.—Transplant from the hot bed to make strong plants for summer use. Sow seed in warm, very rich soil, in drills six inches apart for main crop.

Cucumbers.—Plant only after settled warm weather, in hills four and a half feet apart; put a large shovelful of well-rotted fine manure in the hill; put in plenty of seed for the worms and bugs, and when the rough leaves are made, thin them out.

Horse Radish.—Dig for use, reserving the long, small ends of the roots for replanting—it has been the custom to reset the crowns, but a much nicer and better article is had by planting only smooth cuttings of the root, eight to ten inches long. Plant in rich, deep worked soil.

Lettuce.—Sow in hot bed and in the open ground for succession; transplant to give room to head.

Manure—for the garden should be well rotted and free from weeds and other seeds. Liquid manure is very valuable to forward all vegetables when applied judiciously.

Onions.—The seed of this esculent is usually the first put in after the frost is out of the ground. Set rareripes three inches apart in rows ten inches apart; let the soil be rich and well fined; keep loose and clean. Ashes are excellent for the crop.

Parsnip.—The seed starts slowly and may be sowed early, as light frosts do not injure them. Sow in fourteen-inch drills, in rich, deep, well worked soil.

Peas.—When the first planted are well up, plant for a succession; the dwarfs in drills one to two feet apart, according to growth. Taller growing sorts in double drills, four and a half to five feet apart; bush when up three or four inches.

Peppers.—Sow in hot-bed, boxes, or pots, in the house, to transplant after frosts have gone by into the open ground. Some kinds may be sown in the ground in eighteen-inch drills and thinned to eight inches; give a dressing of guano or hen manure, using care not to use too freely.

Radish.—Sow at intervals in light, sandy soil, and water with liquid manure to force a rapid growth. Sow in any vacant spot broadcast or in drills. To be crisp and good they should grow quick.

Rhubarb should have a good dressing of manure, forked in around the roots, and a headless barrel, surrounded with horse manure, placed over the crowns to force an early growth.

Seeds.—Test all by sprouting in wet moss or the like. In planting, cover the seed with fine soil, in proportion to the size of the seed; small seed requiring less covering, as a general thing, than large ones.

Small Fruits.—Currants, raspberries, blackberries, gooseberries, and strawberries should be pruned, dug about, manured, tied up, and new beds made.

Squash.—Plant only after frosts have passed, for they will not stand the cold. Plant early or dwarf sorts in hills, four feet apart; running sorts six to eight feet. No two varieties should be grown near together as they are very liable to mix.

Tomatoes.—Transplant, from the hot bed, or boxes in which they have been started, in May, after frosts have passed; place different varieties at a distance apart.

Sweet Herbs should be found in every garden. Divide roots of sage, lavender, thyme and rue. Sow seeds where the ground is warm, in drills, separated according to the growth of the plant.

Turnips.—Sow for summer use in light soil, fertilized with superphosphate.

Tools.—Last, though not least, always keep your tools in order, by cleaning after using and put them in their places under cover as soon as through using, and then no time is lost in hunting and cleaning rusty, lost tools.

W. H. WHITE.

South Windsor, Conn., April, 1867.

For the New England Farmer.

FOREST TREES FOR RESTORING LOST FORESTS.

For many situations, and for all seasons, a grove of trees of the pine family produces a finer effect than one of deciduous trees. As a screen it is more perfect. What can furnish a more effectual shield from the winds than a hedge of arbor vitæ? Or what can better protect a house standing too near a noisy or dusty street? It is eye-proof.

A person studious of comfort and of quiet, or of the appearance of quiet comfort,—and how can a home look beautiful which lacks the appearance of comfort?—will find inexhaustible resources among the pines. The white pine, when first planted, needs the protection of a fence or of other trees. But it grows very rapidly, and will continue to grow for centuries, till it towers far above all the other trees; for it is, or was, far the tallest tree native to New England. Its leaves are of a light, delicate green, a pleasant contrast to the brown of cultivated fields, and to the snow and bareness of winter.

Apparently and really more hardy, and a rapid grower, too, is the red pine, commonly called the Norway. It deserves to be better known and more cultivated. Growing by itself, which it does without difficulty, it forms a deep, rich mass, of darker color and hardier appearance than the white. But in all these qualities, it is surpassed by the Austrian pine,

which has been successfully introduced from Middle Europe.

The least valued of our own pines is the pitch pine; but for its picturesque beauty, its hardiness, and the fact that it thrives on sandy plains where no other pine succeeds, it deserves a better character. It approaches nearer than any other American tree, in its qualities and appearance, to the common pine of Europe, called, in England, the Scotch pine or Scotch fir. Every other pine is apt to be stiff and monotonous. The pitch pine is never so; it is always modest and unpretending, common but not vulgar, with a wild beauty and picturesqueness of its own. A low round hill covered with it, near the residence of the Hon. Judge Thomas, in Jamaica Plain, is one of the most agreeable objects in that pleasant neighborhood.

There are several varieties of the lofty Norway spruce,—the white fir of Norway, the red fir of Norway, and the weeping Norway spruce, —which are deservedly favorites with lovers of trees. They have the recommendation,—no small one with us, consistent republicans,—of being distinguished foreigners. Till lately, they had the additional charm of being rare. They deserve all the attention they have received. They have been introduced into the lawns of many of our rich men in the neighborhood of all our cities. If the spruces and firs of our own woods are less imposing, they have still great merits, and ought to receive more attention.

But there is another tree of the same family, which, in beauty and in utility as a screen, is unsurpassed and deserves special notice. It is the common hemlock, with spray and leaves finer than those of any other tree of our climate, or perhaps of any region of the earth. This gives the tree, while it is young, the appearance of the most exquisite delicacy. The leaves, like those of the other evergreens, grow constantly darker as they grow older, so that, in the spring, the close-set, bright yellow, minute, tender leaves, coming out from the opening buds, look like petals of a strange, exquisite flower, at the end of every twig.

The young trees are extremely well suited to form a hedge. They submit patiently to the pruning knife. The terminal branchlets are so small that they make a closer hedge than any other plant; and they may be so managed as to rise to any height desired.

As seen in a thick forest, the tree is often unsightly, and gives a false impression of its character. The lower branches, killed by absence of light, are extremely brittle, and break, not, like those of the true pines, close to the trunk, but at any point, giving it an extremely ragged appearance. None need be alarmed by this fact. For the first half century, the hemlock always has the appearance of extreme youth. One of them standing by itself, and allowed room to expand its branches on every side, will continue very handsome for a century.

The red cedar which flourishes upon poor, hard, rocky hills, which the other pines disdain, has a vast variety of character. Neglected, it is apt to become scraggy and ragged. But with a little pruning, often without it, it is as symmetrical as an Oriental cypress, which, at a little distance, it perfectly resembles.

The white cedar, a true cypress, is a tree of extreme beauty. Nothing can exceed the gracefulness of its top and upper branches. It is hardy and will live anywhere, but grows well only in very moist situations.

There are very many foreign trees of the pine family, which are introduced, cultivated, and highly prized by the lovers of trees. The larches, native and foreign, are hardy, and in Great Britain are extensively cultivated as a timber tree. For our purpose it is to be avoided, as it kills the bushes under it, and is particularly favorable to the growth of the grasses. If you are planting only for grandeur of appearance, in the future, plant the cedar of Lebanon. G. B. E.

Boston, April, 1867.

For the New England Farmer.

RAISING TURKEYS.

The following suggestions from an experience of fifteen years in managing turkeys are submitted to the readers of the NEW ENGLAND FARMER.

Laying.

Turkeys are shy in selecting a place to deposit their eggs; frequently going from one-half to three-fourths of a mile to find some thicket or bush-heap, and exposing their eggs to the depredations of skunks or crows! they having more skill than the owner in searching them out. It takes less time to provide safe places, and to train them to lay in these places, than to hunt up their "stolen nests," to say nothing of their exposure to the depredations of mischievous animals. Take some enclosure that can be spared during the time of laying and hatching, and fix hiding places, in which place a nest egg. Fasten the turkeys into these enclosures a part of the day for three or four days previous to laying. They will reconstruct the artificial nest, sitting a few minutes at each time for a day or two previous to laying. After they have accepted these nests and deposited the first egg, the work is done. I have had from three to eight nests on a long scaffold.

Sitting.

A turkey usually prepares her nest by scratching away the ground so as to form a scallop, which prevents any under circulation of air. In our nest-making we should be guided by the turkey's instincts and preferences. I usually underline with dry horse manure, so that the underside of the egg shall have the necessary warmth; over which I place

the nest, disturbed as little as possible. When the litter is nearly closed, the turkey will commence by sitting at night and a part of the day. The eggs should now be returned to the nest, as there is danger, if we wait until she sits steadily, of exposing the fresh eggs to a too sudden change of temperature for successful incubation.

The turkey is a most assiduous sitter,—sometimes remaining upon her nest, to the destruction of life. They should be occasionally taken from the nest and fed.

Care of the Young.

The turkey, when first hatched, is the most tender of domestic fowls. If they can be brought successfully through the first four weeks, the largest and most difficult part of the work is done. I have found cooping for the first five or six days, in some long coop, like a sheep rick, divided so as to give each turkey some four feet space, the most successful method. The young intermix. Each turkey is the common mother of all the young. When allowed to ramble they will herd together, so that three or four turkeys with 75 or 100 young will make no more labor than one with 15 or 20. During the first four weeks they should not be allowed to ramble until the dew is off, returning them to the coop nights, and keeping them in on rainy days.

Feeding.

The most natural food for turkeys is insects. Were it not for rain and dew they would be self-sustaining. The mother, unlike the hen, does not starve herself to feed her brood. She does not even divide; but takes all she wants. If she is not well fed she will ramble in pursuit of food beyond the strength of her young, and by neglecting the invigorating influence of frequent brooding, may lose the weaker ones. Having tried various kinds of food, the best success has been secured by using wheat bread soaked in sour milk for the first few days, then gradually changing to brown bread, and as they become larger and require more food, intermixing some wheat bran. As soon as insects become plenty, no other food is required, except in rainy, damp weather, which is more injurious to young turkeys than to high blood sheep. If unprotected, a heavy shower will frequently destroy a large share of a healthy brood. About the first of October, insects gradually diminish, the mornings begin to be cold and frosty, and some cheap and nutritious food is necessary; first, once a day; then twice, and after about the first of November, food should be constantly kept before them. I find boiled potato mashed fine, thickened with bean and corn meal, a cheap and good food, which should be made richer with meal, adding corn, as they near Thanksgiving and Christmas.

Statistics.

The following estimates bear upon the question whether rearing turkeys as above described, is or is not remunerative.

Five turkeys will, on an average, bring up 50 young, at an expense of $20 for labor, and $40 for feed or $1.20 per head, ...	$60 00.
1865. Sold 51 turkeys, nearly 13½ lbs. each, .	$116 08
Cost of raising 51 turkeys, $1.20 each, ...	61 20
Net gain, ...	$54 88
1866. Sold 35 turkeys, a fraction over 15 lbs.; one gobbler, 21 lbs.; another, 22 lbs.; and another, 19 lbs.; 38 in all, ...	99 29
Cost of raising, at $1.20 each, ...	45 60
Net gain, ...	$53 69

I have on hand 8 hens, and two young gobblers,—one from first litter, 24 lbs.; from second litter, 19 lbs. Best young hen, 16 lbs.; best young pair, 40 lbs.; average four young hens, 14 lbs. 4 oz.; average four old hens, 15 lbs. 10 oz.; best old hen, 17 lbs.

Brandon, Vt., 1867. H. A. SUMNER.

MANAGEMENT OF LAMBS.

We continue our extracts from Dr. Randall's valuable articles in the *Rural New Yorker*, on "Raising Lambs," compiled from the answers of the leading sheep farmers of New York and New England, to questions which he submitted to them.

Docking and Castration.

Mr. Baker docks and castrates lambs at six to ten days old; Brown, Heyne, Rich and Saxton, at four weeks old; E. O. Clapp at three weeks, A. H. Clapp and Wright, at three or four weeks, but Clapp does not perform both operations at the same time; Elithorp docks at one or two weeks, and castrates at eight; Gregory docks at washing and castrates at shearing; Hammond docks at two weeks and castrates at four; the Marshalls dock and castrate at from six to fifteen days; Pitts, at from one to four weeks; Pottle, at from one to three weeks, according to the "strength and vitality" of the animal; Sanford, at two weeks; Wilcox, at one or two weeks, but does not perform the operations together. Our own views as to time, manner, appropriate weather, &c., are given in the Practical Shepherd.

Killing Ticks on Lambs.

All concur that dipping the lambs in a decoction of tobacco, strong enough to kill ticks, is the most effectual mode of removing these parasites from the flock. The time of our correspondents' dipping them varies from two or three days to two weeks after shearing the dams. We prefer the latter time, so that all the ticks on the ewes shall have had time to get (as they will) on the lambs.

Weaning Lambs.

Baker weans lambs at three months old, making it a point to do so "during the dark of the moon," as they will not bleat as much for their dams in dark as in light nights; Brown, the Clapps, Elithorp, Rich, Saxton and Wilcox, at four months; Hammond, from three and a half to four months; Heyne, from three

to four months; the Marshalls, from four to four and a half months; Pottle, from three to three and a half months; Sanford, five months; Wright, from four and a half to five months. We prefer four months, but might shorten or extend the time according to circumstances.

Tegs---Pasturage after Weaning.

A lamb is called a teg after weaning and thenceforth until it is shorn, at the usual time. As the kind of pasturage most suitable for tegs has been the subject of considerable discussion, and consequently doubt, in England, we put the following question to our correspondents: "Do you prefer to put tegs on pasture lands, or on the after-growth of meadows?" Baker prefers, if the season is wet and the feed good, to return them to the pasture they are used to; Brown, the Clapps, Elithorp, Hammond, the Marshalls, Pitts, Saxton and Wilcox, prefer the after-growth of meadows; Pottle prefers pasture if fresh and good; Rich, good pasture; Sanford would prefer good, fresh pasture, but not having it at that season, uses the after-growth of meadows; Wright thinks he would prefer good pastures if fed close and allowed to start up fresh; E. O. Clapp likes to put tegs on stubbles, (especially wheat stubbles,) where the land has been seeded down to grass; Pottle objects to this, because "the sharp ends of mown stubbles hurt them."

Our own experience was given in the Practical Shepherd thus:—"The moist, mild climate and constant rain in England, affect pastures very differently from the scorching and often very dry summers of the United States; and as a general thing I have found good, fresh rowen or after-math on meadows, or the new seeded grass in grain stubbles, better feed for lambs than rested pastures, unless the latter have been seeded the same or the previous year, and the grass on them is tender and fresh." Such is our continued experience, though it might not be so, nor do we feel at all confident it would be so, under the conditions named by Wright; but in our climate, and on heavily stocked farms, those conditions are seldom conveniently attainable.

There is unquestionably force in Pottle's objection to stubbles. Whether they ever produce sore mouth, as some believe, is very doubtful; they certainly have never affected our tegs in that way,—but they cut off wool from their legs and heads, and thus injure their appearance in points where "fashion" is very exacting.

AGRICULTURAL ITEMS.

—S. F. Dike, of Bath; Abner Coburn of Skowhegan; Lyndon Oak, of Garland; Isaiah Stetson, of Bangor; Wm. P. Wingate, of Bangor; Nathaniel Wilson, of Orono; Geo. P. Sewall, of Oldtown, have been appointed Trustees of the State Industrial College of Maine.

—A gentleman near Rochester, N. Y., has a plantation, some thirteen years old, of the veritable "Big Trees" of California. They are growing finely, but it seems a long time to wait two or three thousand years for the maturity of a tree.

—In opposition to the theory that butter made from the milk of cows kept on limestone soils will not keep well, a correspondent of the *Country Gentleman* cites a case in which a crock of butter made on the "Lime Rock Ridge" of Onondaga Co., N. Y., was sold for an extra price, after it was twenty-two months old.

—In an article on abortion in cows, Dr. Michener, in the *Germantown Telegraph* says: "You will always see a herd of cattle excited and distressed at the sight of an aborted calf in their midst, (and so is the aborter herself;) on the other hand where the embryo remained its full time, the whole herd seem to enjoy it from an instinct of their nature that all is right."

—Dr. Lenain states that carbolic acid vapor will kill flies, ants, lice, bugs, ticks, acari, musquitoes, aphides, butterflies, earwigs, wood lice, cockchafers, centipedes and other insects of this size, but it does not seem to act injuriously on animals larger than mice. It possesses also most wonderful properties as a disinfectant, and was used with encouraging results in treating the cattle plague in England.

—Z. A. Leland says in the *Country Gentleman*, that the main roots of the thistle run horizontally deep underground. When digging cellars, he has found them plenty three or four feet below the surface. Troublesome as the tops are, he regards the roots as good subsoilers, and the plant as a great ameliorator of the soil. He has seen nothing which restores the worn soil to the state it was in just after being cleared, like the Canada thistle.

Cost of Raising Stock.—The cost of raising calves and up to two years of age, was discussed at some length, at a meeting of the Herkimer county, N. Y., farmers. The general opinion was that the cost of raising stock for the first two years was about $50. The following is Mr. Lewis' estimate by items:—

Value of calf if slaughtered for hide or rennet	$1 50
Seven quarts of milk per day for a month, estimating cheese at 15c	7 20
One hundred pounds oil meal fed during summer	2 00
Whey fed during summer	1 00
Pasturage first season	2 00
Wintering first winter, hay at $12 per ton	10 00
Pasturage second summer	8 00
Hay second winter	18 00
Total	$49 70

Vermont State Fair.—The next Annual Fair of the Vermont State Agricultural Society will be held at Brattleboro', on September 10, 12 and 13.

Ladies' Department.

DOMESTIC ECONOMY;

OR

HOW TO MAKE HOME PLEASANT.

BY ANNE G. HALE.

[Entered according to Act of Congress, in the year 1866, by R. P. Eaton & Co., in the Clerk's Office of the District Court for the District of Massachusetts.]

CHAPTER V.

HOUSE PLANTS AND THEIR CULTURE.

OLEANDER.—This plant in its natural state inhabits the borders of rivers—hence its botanic name, *Nerium*. It is a species of laurel—is sometimes called the rose-laurel—and though both leaves and flowers are harmless to touch and smell, they are poisonous to the taste. It is a native of Southern Europe and Asia. In 1683 it was taken to England from the East Indies. It is grown in the gardens and shrubberies of Italy, Sicily and Greece, and cultivated in pots to adorn the grounds of chateaus in France and Spain. One species of the plant has been used in tanning; from another a blue dye, equal to indigo, has been procured. *N. splendens*, a variety of *N. odorum*, is the kind generally cultivated in greenhouses and conservatories in this country; but the atmosphere of the parlor agrees with it. Under good cultivation it bears very large and fragrant flowers of a bright pink color. Propagate it by cuttings. After a mature plant has bloomed, in the spring, cut back the shoots two or three joints, and from these pieces select the strongest, and place it in a bottle of water. Hang the bottle in the sunshine, till it is nearly filled with roots. Then get a pot five inches deep. Fill the first inch with pebbles, and the next with broken charcoal. Lay on this a mixture of loam, peat and leaf-mould in equal proportions. Sprinkle a little of this upon the charcoal. Then hold the young plant in the centre so that the tender roots are not injured, and add the soil: occasionally pressing it in with a trowel, or a potting stick, and then striking the pot to settle it. When the pot is filled, water the oleander, and if the soil be loosened around its collar, add more, and press it carefully to make it firm. Keep it in the shade, and water it every day, till it shows signs of growth. Then give it the sunshine. Wash it often, and give it liquid manure to hasten the flower-buds. Water it abundantly while blooming—indeed, from the first appearance of the flower-buds. If kept in the shade the blossoms will be pale—let it have all the sun possible after they begin to show color. Old nails mixed with the soil darken the color of the flowers, and make them grow large and full. Every spring get out all the old soil that you can with a trowel—a large iron spoon is better for this purpose—and fill in new soil like that named above. Do not injure the roots. The pot need not be changed for three years. Keep it in the shade out of doors, where worms cannot reach the pot nor trees drip upon the plant. Water it enough to keep the soil from drying till the middle of August, then give it more water and the sunshine, gradually. Toward the last of September it should be taken to the house, and in October it will be in bud and ready for the parlor. At Christmas it will be in bloom, and, if the plant is three years old or more, continue so until the middle of May, its large clusters of bright pink flowers delighting everybody with their beauty and fragrance.

OXALIS, comes from the Greek, and signifies *sour*;—the leaves of the plant have an acid taste; and of their expressed juice a chemical preparation is made, and sold under the name of Salts of Lemon, to take out iron-mould and ink-spots. It is a native of Brazil, Chili, and the Cape of Good Hope. There are also a few species growing wild in this country and in Great Britain. Old English herbalists call it "wood-sour tre-foil" (of which our word *wood-sorrel* is a corruption,) and "stubwort." Stubwort, because it covers the ground among the stubs in coppices when they are cut down. They also give it the names of "Alleluia," and "cuckoo's meat;" because it springs up and flowers with the singing of the cuckoo, at which time Easter-Alleluias, or anthems of rejoicing, were sung in church.

Seedlings of the oxalis are easily raised, but the plant is generally increased by offsets, which should be set in a pot drained with pebbles, in a soil of sandy peat and loam. October is the best time to start them, when the parent plant is prepared for the winter. The leaves will soon appear, followed by the flowers, (some species have pink, others yellow) and both leaves and flowers fold themselves up for sleep at the approach of night. During the winter, water liberally; but in the spring gradually withhold the supply till the leaves are dead, and keep the pot in a dark, cool place all summer. The oxalis is very pretty for a hanging pot.

ORANGE, has been considered under the head of LEMON.

PANSY.—This word is a corruption of the French *pensee*, thought. Louis XV. called Quesney, the founder of the economists, his "thinker," and caused him to wear three flowers of the *pensee* as his coat of arms. "There's pansies, that's for thought," says Ophelia, in Hamlet. Shakspeare also calls it "love-in-idleness," as in this extract from the "Mid Summer Night's Dream—

> "Yet marked I where the bolt of Cupid fell,—
> It fell upon a little western flower;
> Before milk-white, now purple with love's wound,
> And maidens call it love-in-idleness."

The plant is really a violet, and is sometimes called the *tri-colored* violet. It also bears the names herb-trinity, three-faces-under-a-hood, ladies'-de-

light, kit-run-about, and heart's-ease. Christiana's guide, in the Pilgrim's Progress, says of a shepherd-boy singing—"this boy leads a merrier life, and wears more of the herb called heart's-ease in his bosom, than he that is clothed in silk and velvet." The pansy is common in Great Britain, growing in the corn-fields and hedges—blooming all summer. Under the name of "ladies' delight," it early found its way to this country; but of late years it is seldom seen, except in old-fashioned and neglected gardens. In its place, hybrids, obtained by crossing the plant with the dark purple English violet, have met with great favor. Our handsomest varieties come from Switzerland, Germany, and France. England also furnishes some that are very fragrant and beautiful. They are of all shades of white, yellow and purple,—separate as well as united in the same flower. Pansies are most easily raised from division of the roots, but they are also propagated by seeds and cuttings. Start cuttings in sand, under a tumbler. Then set them in a pot well-drained with clinkers; the soil being rich loam, sand and decayed leaves, thoroughly mixed. Shade them a week, and water them very charily—just enough to keep them from getting dry. Seeds planted in the garden in the spring will afford cuttings or divisions in September for winter flowers,—which should be ready for the parlor by the last of October. Do not water them too much.

Petunia.—This word comes from Petun, the Brazilian name for tobacco, which the plant was at first thought to resemble. It is a native of South America, and was introduced to the notice of florists in 1823. This was the common white petunia. In 1830 a purplish-crimson species was discovered, and from the cultivation of these two have sprung all the varieties now known. The common single petunia is easily cultivated, and quite hardy; but the recent varieties, bearing enormously large and double flowers, though very beautiful and fragrant, are frail and extremely difficult to propagate. Common white or purple petunias are easily raised from seed, in the garden whence they may be transferred to the house. Set apart as many as you wish for winter as soon as they come up, and pinch off the flower-buds as fast as they appear. By the autumn these plants will be stout bushes, which can be potted, for flowering. About the middle of October get a five or six-inch pot and drain it with a handful of pebbles. On this lay lightly an inch of rich garden mould, and then set your plant. When you take it up don't disturb the roots; and press the soil carefully around the ball when placing it in the pot. Water it to settle the soil, and make the surface smooth and even. Keep it in the shade a week. Then give it full sunshine. Water it occasionally with liquid manure, beside giving it warm water freely every day. If it grows too slender pinch off the flower-buds, and abate the water. Some varieties, even with this treatment, will require a frame for support. The petunia can also be easily raised from cuttings, by rooting them first in a glass of water placed in the sunshine, and then set in soil. The double, and larger kinds, are apt to decay if placed in water,—start those in sand under a glass.

Periwinkle.—This pretty little vine is of English origin. Its botanical name, Vinca, is from the Latin, and refers to its habits of twining, and binding its shoots about everything in its way. We sometimes call it running myrtle, because of the resemblance of its leaves to the broad-leaved myrtle. It is an evergreen; and may be transplanted from the garden in the autumn to a pot, or large sea-shell, filled with good loam, for a hanging flower. Water it once a fortnight with liquid manure and it will grow luxuriantly. By February it will be studded with bright blue blossoms, (—one variety bears white,—) and form a pretty contrast to the money-plant. It may be returned to the garden in May. Never let the soil get dry.

Pink.—*Dianthus Chinensis*, or China Pink, though frequently considered a garden flower is a very beautiful addition to the flower-stand. This was first cultivated in England in the early part of the last century, and from thence brought to this country. Sow the seed in the garden in the spring. It needs light, rich mould. In October pot a plant for the house—draining the pot with pebbles—and keep it shaded a fortnight, watering it freely the while—and then give it sunshine. Apply liquid manure to the soil once a month through the winter. The bright crimson velvet flowers will crowd each other unless you remove some of the buds, and the plant will go straggling over the pot if the stems are not tied up to rods. In the spring increase by layers in the same way as carnations—it is a surer and quicker way than by cuttings. The China Pink needs a great deal of water, but in small quantities.

Primrose.—This is so called because in England, its native place, it is often the first to open its flowers in the spring. One species, the auricula, has been already described. There is another, the polyanthus, which is very desirable for edgings of beds and borders; and which is worthy a place within doors for the sake of the profusion of flowers it will give in January, in return for good care and plenty of water and sunshine. Its clusters of yellow flowers, richly bordered with claret velvet, almost of themselves "make sunshine in a shady place." Give it the same treatment as the pansy.

Pyrethrum.—This is a species of chamomile, which it is sometimes called. Another name of the plant is *mountain-daisy*; that was given it because it resembles the genus pyrethrum, which includes many plants that are natives of high places, as the peak of Teneriffe, Caucasus, the Alps, and the Ural mountains. It also bears the name of *feverfew*; and is of the same order as the chrysanthemum, the daisy, and the aster. They all bear compound flowers,—which are among the easiest for cultivation,—readily changing from single to double in their flowering habits. But in order to perpetuate a double flowering plant the seeds per-

fected by the florets of the ray—as the bordering part of the blossm is called—should be always planted. Compound flowers are also propagated by cuttings, and by division of their roots. The pyrethrum is most generally increased by cuttings. Keep the piece in water a week. Then get a pot and fill it one-quarter with sherds, for drainage, and in a soil of sand, leaf-mould, loam and peat set the young plant. Shade it a week or two, and give it warm water daily. When it begins to grow place it in a sunny situation, but after the flowers have opened, remove it to the shade—they will thus retain their beauty and purity for a great length of time. The delicate green foliage and snow-white flower of the pyrethrum make it a very beautiful parlor plant. It is very suitable for ornamenting the dress, or the hair, and is an appropriate funeral flower.

ROSE.—We come now to the queen of flowers, as the rose has been acknowledged in all ages, throughout all lands. It derives its name from *rhos*, an ancient Celtic word meaning red, in allusion to its most frequent color. There are no roses in Soutn America; but they are found in North America, and all over the Eastern continent. Asia is the garden of roses. The vale of Sharon, of whose roses Solomon sang, was by position and soil fitted to produce them in great perfection. And Virgil and Ovid have celebrated in their verses the roses of ancient Pæstum, (now Salerno, in Italy,) which were said to arrest the voyagers of the Mediterranean by their delicious odors. In fact, not a poet, nor a poetaster, whose words have reached the public ear, has ever felt that his work was complete until in rhyme or rmythm he had attempted to portray the charms of this matchless flower. The old mythology asserts that the red rose is indebted to Venus for her blushes. That the blood which flowed from her thorn-wounded feet, when running through the woods in her despair after the death of Adonis, lent the flower its color; and that the white rose sprang from the tears which she shed at that time. But Anacreon tells us that it was dyed with nectar by the gods when it was first formed;—he speaks of it also as the flower of Bacchus. The Turks believe that the rose sprang from the sweat of Mahomet, and they deem it a sacrilege to allow one of its petals to fall to the ground. And in Persia a festival is held in honor of the rose, which continues the whole time that it is in bloom. Not only there, but in Egypt, and Barbary, as well as in the nations of Southern Europe, the rose fills an important place at all festivals and entertainments, both in the way of decorations and in the gratification of the palate,—it is said that the Turks have several different ways of preparing it for sweet-meats.

The famous attar, or otto, of rose, which used to be dearer than gold, is made in Turkey; as also in Persia, and India. But many consider that now made in France superior in delicacy or perfume—the Turkish attar being a coarser, stronger odor. Only the damask rose, which takes its name from Damascus, where it formerly grew in great abundance, is used in making the attar. Among the East-Indians, the Chinese, Japanese, and the Persians, rose-water is used as cologne-water is by us—or, rather, more freely. One ceremony of salutation when a friend calls is the sprinkling of his garments with rose-water, by the host. Elegant China bottles, with stoppers of a peculiar form, provided for the purpose, are counted among the indispensable articles of housekeeping by families in good society. But we must return to our own country and our own regard for this beautiful and fragrant flower.

The brier-rose—wild-rose—dog-rose—it has all these appellations—takes its name from an old notion that its root and hips—seed vessels—would cure the bite of a mad dog. It is a true sister of all the exquisite roses of which there are over two thousand varieties, that beautify the gardens, the conservatories, and the parlors of all the civilized world; and makes the best stock for grafting the most superior kinds. It is useless to attempt to enumerate all that are considered suitable for house culture. Most of them that stand high in favor are varieties of the China, or Tea-scented rose, of which the old-fashioned monthly rose is a good representative. You may have them of all colors, from deep red to snow-white. The original tea-rose was brought to notice in 1812, and its descendants have the same wants, and are characterized by the same habits as their ancestor. They need frequent cleansing, or they will be infested by the red spider, thrips, mealy bug—in fact, all insects, to use the words of a distinguished florist, "from an earwig to a lady-bug." But the lady-bug is really a benefit to the rose, for it feeds upon the aphis and its eggs, and so helps to rid the plant of that pest. Rose-bushes should have well-drained pots, but they need not be very large ones. They should also have plenty of pure air and sunshine; though some are patient enough to look thriving, and benevolent enough to show their flowers where there is scarcely a ray of sunshine the whole year. Cuttings should be first rooted in sand, under a tumbler, and then transferred to a pot drained with sherds; having a soil of rich loam, sand, peat, and leaf-mould, together with a little fine charcoal, coarsely mixed. Keep the young plant shaded a fortnight after this change, and water it sparingly—but never allow it to become dry. Then it will be strong enough for the sunshine. As the new branches are thrown out give it a little more water. When buds appear it must have all the sunlight possible until the roses open. But they will retain their beauty longer, when in full bloom, if protected from the noontide rays of the sun; all the rest of the day they should enjoy it, and have plenty of water. When the flowers have faded, cut their branches back half-way that they may throw out more blossoms. When the bush has ceased blooming cut back all the branches to within a few inches of the old wood, and abate the watering, and keep it in the shade—that it may

rest. After a few weeks repot it, with a ball of earth about its roots, and sink the pot in the garden mould till September. If buds appear, pinch them off. In September, raise the pot, and water it regularly every day, but never let the water stand about the roots, or let the soil appear soggy —stir it frequently. Keep it in a cool place, within doors, till the nights get chilly, then give it a sunny situation in the parlor. If the plant is strong, and thriving, and there are no fears of its getting pot-bound, the pot need not be changed oftener than once in four years; but the old soil should be replaced by new in the same way as for oleanders.

SALVIA.—This genus is so called on account of the supposed healing qualities of most of its species, which have been found in nearly every country on the globe. In this country we have several exotics under cultivation; among them our common garden sage, which is used in cookery, as also in medicine. In China one variety of this is preferred to the tea-plant for making that beverage. *S. Mexicana* is usually styled a garden plant, but it is a very pretty ornament for the flower-stand, though its bright scarlet flowers are of rather short duration. This is the Mexican sage, often called only by its botanic name, *Salvia*. There is another species, S. splendens, which, as it also comes from Mexico, always bears the name of Mexican sage. They both require the same treatment, though differing in appearance. *S. splendens* may be known from its long spikes of flowers, having the calyx as well as the corolla of a bright scarlet. *S. Mexicana* has a green calyx, and the scarlet corolla is more labiate than that of the other species. Transplant these from the garden, or take a large cutting and start its roots in sand, well-shaded, in September. Give it a soil of one-half loam and the remainder leaf-mould and sand to which a little fine charcoal may be added. Water it sparingly and keep it in the shade a week; then increase the water and give it a place in the house. About the middle of October it will be ready for the parlor; its elegant scarlet flowers will make a fine show for two months. Then set it in a cool, dry place till spring, when it should be set in the ground till the following autumn. Divide the root; when it gets very large, take new cuttings and let the old one remain in the garden.

VERBENA.—This name is derived from the Celtic for *vervain*, a plant that grows freely along our country roads. It is in fact the same plant, with this exception—the wild vervain bears its flowers in long spikes, and the verbena of cultivation is a cluster-flowered species. The wild vervain was once called holy-herb. It grew on the Capitoline hill at Rome, and was considered sacred both by the Romans and Greeks, who used it at religious festivals, and also sent it by their ambassadors when making treaties of peace. It was much valued by the Druids of ancient Britain, and used by them in casting lots and foretelling future events. Their priests ordered the plant to be gathered "when the dogstar rose at such time as neither the sun nor the moon should be above the earth to see it." With this charge also, that "before they take up the herbe they bestow upon the ground where it growcth honey with the comb, in token of satisfaction and amends for the violence and wrong done in depriving her of so holy an herbe." It is said that the vervain is always found in the vicinity of towns and villages, that it never grows at a half mile's distance from houses, which circumstance has gained for it the name, "simpler's joy." The first really handsome verbena that was introduced for cultivation came from Buenos Ayres, in 1827. It was a beautiful plant, bearing scarlet flowers, and immediately became a favorite. Since then a large number have been brought to notice, and we have them of every color and shade except light blue. The verbena is raised with little care, but it grows the handsomer for good attention. Seedlings will bloom in three months from planting; the seed can be sown in the garden in May, and in the autumn a plant can be potted for the parlor. But a better way is to take cuttings in August,—July is none too early if the young plants are large enough,—and set as many as you choose in pots drained with clinkers, in a soil of loam, leaf-mould and sand. Water the plant slightly, to settle the soil, and then fill in the soil to the rim of the pot. Keep the plant in the shade a month. Pinch off the shoots, especially the central one, to make it grow bushy. Then set it in the sun, and give it liquid manure occasionally. Some persons prepare a fertilizer for verbenas by mixing—immediately before using it—half an ounce of the sulphate of ammonia with a gallon of water; and apply it to the soil once a week. This is also a good preparation for calceolarias and lantanas and ivies;—and it suits the fuschia and the heliotrope—giving to their foliage a peculiarly dark, green, healthy appearance.

Tie up the stalks to rods arranged at the edge of the pot, or train the plant to a trellis. Syringe it thoroughly, at least once a week, to keep off the aphides, after taking it to the flower stand, which should be in October. Give verbenas all the sun you can, and a plenty of air, but don't water them too much. The colors of the crimson and purple flowered varieties are deepened by mixing charcoal dust with the soil. In the spring cut verbenas half way back on every stem, and set these cuttings, as also the old roots, in a bed in the garden; and as the branches lengthen pin them to the soil,—to take root for more plants,—with old hairpins, or bits of bended wire. The verbena in many of its species has strong propensities for trailing, so it can be made a pretty hanging plant by allowing the branches to grow, and only pinching off the side shoots. All verbenas for the house should be placed in the pots they are to occupy through the winter in July or August.

—A law suit is pending in Chicago about five and a half inches of land.

HOUSEHOLD ECONOMY.

CONTRIBUTED FOR THE NEW ENGLAND FARMER.

Fried Potatoes.

Pare and cut the potatoes in thin slices over night, let them stand in cold water. In the morning, shake them in a dry towel, till perfectly drained. Then drop them into *very hot* fat, enough to float them. (The fat from beef suet is best.) Shake and turn them till brown, keeping them very hot. Dip out with a skimmer and salt them a little. If properly done they will be crisp and delicious.

Dressing for Fowls.

A sausage cut up with bread crumbs, wet with an egg and a little boiling water, will be found to be convenient and good.

Sponge Cake Pudding.

Stale sponge or other plain cake may be made into a nice pudding, by crumbing it into a little more than a pint of milk and two or three beaten eggs and baking it. Sauce—sugar and butter beaten together.

Orange Custard.

Remove the rinds, thick cells and seeds from four oranges. Add sugar and wine to the pulp till it is agreeable. Place a layer of sponge cake broken small on the bottom of a deep glass dish. Pour over a part of the orange, wine &c. Then another layer of cake, and the remainder of the fruit. Just before it is served, pour over the whole, *cold*, soft custard, made by stirring the beaten yolks and a little of the white of three eggs into a pint of boiling milk, with three table spoonfuls of white sugar.

MARY.

Parsonsfield, Me., 1867

I find so much that is valuable in your department of family receipts, that it is but fair that I should contribute my share towards keeping it full. The great difficulty which we housekeepers on a moderate income have, is to get up nice but cheap dishes. One cannot help making good things, who has plenty of eggs, butter, sugar, &c., to draw upon; the trouble is to suit the family on an economical use of these staples. Such receipts then should, I think, have the place of honor in your columns.

Brown Bread Breakfast Cakes.

Mix up brown bread over night as usual, then in the morning instead of putting all into one loaf, put it into the "cast iron roll pan," now sold everywhere. Bake half to three-quarters of an hour, and you have a nice thing for breakfast, sure to be light and wholesome.

Indian Cakes.

Mix up Indian meal with water or milk, with or without an egg, into a batter, rather thicker than for griddle cakes, add a trifle of flour, salt well, and pour it into the cast iron roll pan, previously well heated; bake in a very hot oven. Success greatly depends on having the pan and oven hot enough. Wheat flour may be used in place of the meal.

Graham Cakes.

Take nice Graham flour, with plenty of salt, wet it with boiling water, into a thick dough, cut into rolls about an inch thick. Bake in a hot oven.

Troy Pudding.

The following receipt was published in your paper a long time ago; it is so valuable as to bear repetition, especially for the benefit of your many new subscribers:—

Two-thirds of a cup of pork or suet chopped fine, two-thirds cup of molasses, one cup of sour milk, one teaspoonful of saleratus, four cups of flour, three cups of any kind of berries or chopped apple. Steam three hours. Sauce—Butter, sugar, a little boiled cider, flour and water. Indian meal may be substituted for part of the flour with economy.

Cusk a la Creme.

If any housekeeper desires to make the best dish from fresh fish she ever saw or tasted, let her try the following:—

Take a fish weighing from two to three pounds, rub it well with salt and put it into a kettle with enough water to cover it. When it comes to a boil set it off where it will cool. When cool enough take out the bones. Take a pint of milk or cream, and boil a large onion and a piece of mace in it. Rub a quarter of a pound of butter into some flour, strain off the onion from the milk, and mix smoothly, adding a little pepper. Put it on the fire and stir until like a thick sauce. Lay the fish in a deep dish and pour the sauce over it. Have some crumbs ready to sift thickly over the top. Then bake from half to three-quarters of an hour.

GAVA.